Texas Workforce Investment Council
2015 Survey of Texas Employers

Conducted by

Public Policy Research Institute
Texas A&M University

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Executive Summary

The 2015 Texas Workforce Investment Council (Council) Survey of Texas Employers was designed to help understand the challenges confronting businesses in hiring qualified workers. The 2,738 businesses that participated in the online survey provide a representative sample of Texas businesses that have hired in the past 12 months. Where appropriate, the results were compared to the most recent report from the Texas Manufacturing Outlook Survey (Outlook Survey). The Outlook Survey is conducted monthly by the Federal Reserve Bank of Dallas. The October survey is based on 108 Texas manufacturers and contains data on hiring needs that is collected annually. Findings from the Council's employer survey are summarized below:

Hiring is Difficult: The vast majority of businesses participating in the survey (73 percent) tried to hire in the past 12 months. More than two-thirds reported at least some difficulty in hiring qualified applicants. The most recent Outlook Survey report found that 72 percent of manufacturers reported "problems findings qualified workers when hiring." Notably, this is identical to the results for the manufacturing sector in the current survey.

When asked to estimate the percentage of *hard to fill* positions, businesses estimated that just over half of all positions (55 percent) were *hard to fill*. Larger businesses were more likely to report difficulty in filling positions but estimate fewer open positions were *hard to fill*. These *hard to fill* positions were reported to take more time to fill and utilize more resources for recruiting new employees and retaining and training current employees. According to the Outlook Survey, 32 percent of manufacturing businesses reported passing on labor costs to consumers via price increases.

Challenges in Filling Positions: The most cited challenge in filling positions was a lack of relevant work experience, though businesses also noted that offered positions were not always accepted and that the lack of soft skills and occupational skills in applicants were also factors. Educational credentials were not ranked as highly suggesting that occupational training programs, rather than 2-year or 4-year degree programs, are also critical to addressing state workforce needs. The results presented here differ from the Outlook Survey. According to the Outlook Survey, the most cited difficulty in finding qualified workers was the lack of technical competencies (62 percent) followed by the lack of soft-skills (46 percent). The different results likely reflect differences in question format and response options. The Outlook Survey was a check all that apply format (rather than a rank the top three considerations) and did not include a separate category for occupational skills. Moreover, the question of experience noted "a lack of experience" rather than "a lack of relevant work experience."

The importance of industry-specific trade skills were noted later in the survey when businesses were asked what skills were most difficult to find in the local area. Fifty-three percent of businesses ranked industry-specific qualifications or credentials for skilled trades as the most difficult to find, while 43 percent identified industry-specific qualifications for occupations other than the skilled trades. Perhaps surprisingly, only 30 percent of survey participants identified computer or IT skills and only 28 percent identified foundational academic skills. This finding was reinforced by responses to an open-ended question asking businesses what jobs were *most difficult to fill*. The most frequent responses were categorized as skilled trades, including carpenters, plumbers, and electricians.

Soft-Skills: Texas businesses identified attendance and dependability as the soft skills most lacking in applicants followed by a lack of critical thinking and problem solving skills, as well as a lack of self-direction. Basic skills, like writing and reading, were identified less commonly. When asked to identify

deficiencies in current workers (rather than applicants), businesses ranked inadequate problem solving skills first followed by inadequate basic skills, including attendance and timeliness.

Recruiting Less Qualified Workers: To address the lack of qualified applicants, businesses have primarily resorted to hiring less qualified workers and increased recruiting efforts within Texas. Fewer businesses have shifted operations out of Texas, eliminated positions, or utilized external training programs. When it comes to recruiting, businesses rely on a mix of old (word of mouth) and new (internet and social networking) methods for recruiting new workers. Businesses address the lack of qualified applicants through in-house trainers and on-the-job training. In this respect, difficulty in finding qualified applicants exerts real costs to the bottom line for Texas businesses.

Importance of Labor to Company Future: The importance of labor to business strategy cannot be overstated. First, businesses rank labor costs and skills training as a top consideration in setting overall business strategy. Second, businesses rank labor considerations over other considerations, such as increasing customer satisfaction or producing new products, as key to the company's future. Maintaining a skilled and flexible workforce is the most highly ranked factor in importance to a company's future, regardless of industry sector, employer size, and region. Third, businesses rate their *most difficult to fill* positions as extremely critical (57 percent) or critical (20 percent) to business success.

Introduction to Texas Workforce Investment Council and Survey Rationale

Background

Created by the Texas Legislature in 1993, the Texas Workforce Investment Council (Council) assists the Governor and the Legislature with strategic planning for and evaluation of the Texas workforce system. As the state workforce board, required by the federal Workforce Innovation and Opportunity Act of 2014, the Council is also charged with assisting the Governor with collaboration among system partners and the review of state and local plans. There are 19 members of the Council. The Governor appoints 14 members representing business, organized labor, education, and community-based organizations. The remaining members are ex officio representatives of the Council's five member state agencies. The scope of the Council's work is "workforce development," which is defined in the Council's state statutes as "workforce education and workforce training and services." Workforce education is further defined as articulated career-path programs and the constituent courses of those programs that lead to a sub-baccalaureate license, credential, certificate, or degree.

The Texas workforce system comprises 19 workforce programs and initiatives administered by eight state agencies and their local program and service providers. The 73rd Texas Legislature created the Council under Senate Bill 642, the Workforce and Economic Competitiveness Act. The Council's structure, administration, and functions were modified by the 74th Texas Legislature in 1995 under House Bill (HB) 1863. In 2015, HB 1606 continued the work of the Council, including statutory responsibilities for strategic planning, evaluation, and performance measurement, and added four statutory functions related to the Texas skill standards system.

Texas Government Code (TGC) 2308.101(a)(6) directs the Council to evaluate the effectiveness of the workforce development system. In TGC 2308.101(a)(7), the Council is authorized to use administrative records of the state's unemployment compensation program and other sources as appropriate in evaluating the workforce development system. In TGC 2308.101(a)(9) the Council is tasked with recommending measures to ensure that occupational skills training is directed toward both locally in-demand, and high-skill, high-wage jobs. In TGC 2308.1015(a)(1) the Council is charged with evaluating programs administered by agencies represented on the Council. Specifically, the Council must identify any duplication of or gaps in the service provided by those programs and any other problems that adversely affect the seamless delivery of those services. Finally, in TGC 2309.1015(a)(2), the Council is directed to develop and implement immediate and long-range strategies to address the problems identified by the Council.

Texas Workforce System Partners

Texas Department of Criminal Justice – Windham School District

Texas Education Agency

Health and Human Services Commission – Department of Assistive and Rehabilitative Services

Texas Higher Education Coordinating Board

Texas Juvenile Justice Department

Economic Development and Tourism, Office of the Governor

Texas Veterans Commission

Texas Workforce Commission

2015 Survey of Texas Employers

In a listening session hosted by the Council in preparation for the development of the state workforce system strategic plan, the U.S. Chamber of Commerce Foundation offered a presentation about employer needs for a skilled workforce. A key theme of the presentation was that employers were having a difficult time finding certain types of employees and that, as a result, sometimes job listings remained unfilled for long periods of time. This message was echoed by a majority of the employers presenting on a Texas employers panel during a subsequent listening session that focused on economic development, business recruitment, and business expansion.

Studies on the topic of workforce skills shortages use various sources of data and methodologies that draw different conclusions about this perceived issue. The Council has consistently heard from its constituent employers about concerns regarding skills and qualifications missing in the Texas labor market. To address those concerns and identify key areas where Texas may be facing skills shortages, the Council reached out directly to Texas employers through an online survey in an attempt to quantify hiring difficulty at the regional level, to determine if and where they exist, and what consequences these issues may have for employers.

The plan for this survey was inspired by two existing surveys. The first was a survey on skilled worker shortages in U.S. manufacturing conducted by Deloitte and The Manufacturing Institute of the National Association of Manufacturers. The second was a 2014 survey on employer needs conducted by the North Carolina Association of Workforce Development Boards. The purpose of these surveys was to hone in on any difficulties in finding workers with critical skills, as perceived by employers. Both surveys, in essence, identified supply/demand discrepancies in the labor market. The survey results included the location (city, county, state, etc.), types of skills that were missing, and the extent to which the existence of such discrepancies had a negative effect on the employers specifically, as well as on the economy more broadly.

The Council developed a survey instrument that was sent via email to Texas employers based on a sample of employers drawn from the unemployment insurance (UI) database. The Public Policy Research Institute at Texas A&M (PPRI) drew a randomized, representative sample from the population of employers in the UI database and administered the survey. Response to the survey surpassed the goal of 2,500 completed survey responses from Texas employers. The 2,738 responses ensures that the survey results can be generalized for businesses that have sought to hire new workers in the last twelve months. The number of responses also ensures that there is sufficient variation across employer size, industry, and location to gain a representative understanding of the opinions of Texas employers.

The survey contained 26 questions, including demographic information for each employer. The questions focused on the employers' perceptions of shortages in the labor market. The objective was to analyze what types of workers are needed, what qualifications and skills are required, and what types of job openings are difficult to fill. These issues were determined by examining how the employers perceive the availability of a variety of worker characteristics against the requirements of existing openings, including:

- Technical skills
- Soft skills
- Credentials, qualifications, or certifications

The findings of the survey will help to inform the work of the Council, its system partners, and support implementation of the new workforce system strategic plan.

Methodology Report for the
Texas Workforce Investment Council 2015 Survey of Texas Employers

Sampling

The 2015 Council survey was designed to identify gaps in employee skills and employers' ability to fill their workforce needs. In order to focus attention on industry sectors which employ middle-skill workers, data collection for the survey was limited to the following industry sectors (as defined by the NAICS code):

- 21 – Mining, Quarrying, and Oil and Gas Extraction
- 22 – Utilities
- 23 – Construction
- 31 – Manufacturing
- 48 – Transportation and Warehousing
- 51 – Information
- 52 – Finance and Insurance
- 54 - Professional, Scientific, and Technical Services
- 55 - Management of Companies and Enterprises
- 61- Educational Services
- 62 - Health Care and Social Assistance
- 81 - Other Services (except Public Administration)

Limiting the survey to specific industry sectors allows for more observations within each of these identified sectors, as well as greater confidence in the findings. These sectors often require specific skills or educational credentials, and they make up approximately 60 percent of all jobs within the state. The sectors not included in the sample are listed as follows: Agriculture, Forestry, Fishing and Hunting (11), Wholesale Trade (42), Retail Trade (44), Real Estate and Rental and Leasing (53), Administrative and Support and Waste Management and Remediation Services (56); and Public Administration (92). These sectors typically employ individuals in jobs that do not require specific skills or educational criteria.

The sample frame for the survey was drawn from the Unemployment Insurance (UI) database and was intended to represent the population of Texas-based employers within the identified industry sectors and with two or more employees. The UI data are considered the gold standard for sampling business organizations as they provide the most up-to-date and accurate business listing available at any given point in time. Even so, UI data may miss newly opened businesses and may include businesses no longer in operation. Because this study was an online survey, the sampling frame was limited to those businesses with an email address included in the UI database. While most businesses have a listed email address (85 percent), it is important to note that the sampling frame is missing a subset of the overall business population.

To assure adequate representation of larger employers and specific industry sectors, the selected sample was stratified by NAICS code and employer size. Table 1 displays employee size and industry sector from the UI database. As can be seen in Table 1, most of the businesses were relatively small (2-19 employees) and the most common sectors were construction; professional, scientific and technical services; and health care and social assistance. A simple random would not yield an adequate number of larger businesses (500 employees or more) or smaller industry sectors (utilities, manufacturing, or management of companies). Therefore the sample was designed to adjust for these issues.

Table 1: Number of Businesses by Employee Size and Industry Sector

	Number of Businesses	Percent of Businesses	Sample	Sample %	Bounced Emails	Opt Out	Completes	Complete %	Response Rate
Employee Size									
2-19	139,293	85.0	22,771	58.9	2,620	570	1,400	54.82	6.95
20-99	18,242	11.1	10,574	19.7	1,705	234	810	31.71	9.13
100-499	4,805	2.9	3,093	14.5	403	68	281	11.00	10.9
500 or more	1,502	0.9	962	6.9	91	26	63	2.47	7.8
Industry Sector									
Mining, Quarrying, & Oil and Gas Extraction	5,428	3.3	1,677	5.2	254	46	114	4.50	8.14
Utilities	1,079	0.7	573	3.1	69	19	53	2.11	10.76
Construction	29,426	17.8	7,697	14.7	1,046	189	497	19.54	7.54
Manufacturing	2,210	1.3	835	3.6	124	24	54	2.15	7.79
Transportation & Warehousing	8,486	5.1	2,180	6.3	278	59	127	5.05	6.79
Information	3,097	1.9	951	4.2	155	24	63	2.47	7.93
Finance and Insurance	11,762	7.1	2,511	7.3	372	61	161	6.30	7.57
Professional, Scientific, & Technical Services	36,575	22.2	7,227	15.1	988	167	441	17.38	7.14
Management of Companies and Enterprises	730	0.4	436	2.9	61	8	32	1.25	8.63
Educational Services	4,566	2.8	1,499	6.6	183	29	121	4.78	9.32
Health Care and Social Assistance	37,178	22.5	7,321	19.7	851	144	573	22.63	8.98
Other Services (except Public Administration)	24,522	14.9	4,493	11.5	438	128	301	11.82	7.54
Total	165,059	100	37,400	100	4,805	899	2,554	100	7.88

The specifications of the sample design are outlined below:

1. After removing duplicate email address, business names, and phone numbers, all businesses with 100-499 employees (N=3,093) or with 500 or more employees (N=962) were selected for sample inclusion. Duplicates typically reflected businesses whose listed contact was an accounting firm hired to handle the company's payroll.
2. 3000 businesses were randomly selected from each of the remaining size categories (2-19 and 20-99) to assure adequate sample in each of these categories.
3. 600 businesses were selected from each of the industry sectors included in the sample to assure adequate coverage in each of the industry sectors.
4. The remaining businesses were sampled randomly.

Constructed in this manner, the initial sample was based on 37,400 businesses with valid unduplicated email addresses. Of the initial 37,400 emails, 4,805 "bounced," meaning the email went to an invalid email address. In addition, 899 potential respondents opted out of the survey. Every effort was made to assure that potential respondents were contacted, including an initial letter asking individuals to identify a more appropriate contact, utilizing alternative emails in the UI database where available (approximately nine percent of the sample had at least one alternative email address listed) and calling larger employers to identify the most appropriate contacts.

The survey was designed primarily as on online survey. Contacts associated with each email address were sent an initial email/letter from the Council describing the survey and informing participants they would be contacted by the PPRI. This initial letter was followed by a subsequent email from the PPRI asking respondents to participate in the survey and providing a link to the online survey. Respondents received two reminder emails asking them to participate in the survey approximately one week after the initial email request. A small percentage of the initial sample had additional email contacts included in the sample data. If those businesses did not respond to the initial contact attempts, subsequent emails were sent to these alternative email addresses. Finally, calls were made to businesses with 100 or more employees who had not responded to the survey or with bounced email addresses to identify more appropriate contacts. Businesses that provided these alternative contacts were sent an additional email and subsequent reminders.

The final sample yielded 2,554 completed interviews and overall response rate of 7.9 percent. Response rates for the survey were computed using the following formula:

Response Rate = Completed Interviews / (Total Emails Sent – Bad Email Addresses)

This initial estimate does not include partially completed interviews, many of which included useful data. Including the partial completes--defined as respondents who made it through more than half of the survey--the response rate is estimated as 8.6 percent. Table 2 provides response rates by inclusion criteria. 10.5 percent of respondents followed a link to the survey, 10.4 percent completed the first page, 8.7 percent completed the second page, and 8 percent completed the third page.

Table 2: Response Rates by Inclusion Criteria

Criteria	Number of Respondents	Response Rate
Followed Link to Survey	3393	10.5
Completed First Page	3376	10.4
Completed Second Page	2824	8.7
Completed Third Page	2604	8.0
Completed Survey	2554	7.9

One caveat on the survey respondents: A number of potential respondents sent emails indicating that the survey did not apply to them because they had not done any hiring over the past 12 months. These companies were typically small family owned businesses.

In the data analysis sections of this report, both completed interviews and a subset of partial completed interviews are included in the analysis. For a partial complete to be included, the respondent had to get at least halfway through the survey and have valid (non-missing data) responses. Finally, because the initial sample was stratified to assure adequate representation of larger employers and by industry sector, final data were weighted to reflect differences in sampling probabilities and response rates. Sample weights were constructed using "sample raking" in which sample weights are adjusted to match population totals for employer size and industry sector.

Table 3 presents the distribution of the population, the initial sample drawn randomly from the population, and the completed interviews by local workforce development area. Table 4 presents the distribution for these estimates for Comptroller Regions. As can be seen, differences across workforce development boards and Comptroller Regions are relatively small. With the exception of the Gulf Coast region, sampling percentages closely mirror population percentages. Twenty-one percent of completed interviews are in the Gulf Coast region compared to 24 percent in the population and the drawn sample. The difference are made up in the smaller regions, thus giving us more confidence in the estimates in these areas.

Comptroller Regions were used in all subsequent statistical analyses. First, all local workforce development areas are contained within a Comptroller Region. Second, due to the number of responses in some workforce areas, it would be difficult to generalize results. Finally, because there are fewer Comptroller Regions, sample sizes in these regions are typically larger at the regional level allowing for greater confidence in the results.

Table 3: Population and Sample Distribution by Local Workforce Development Area

	Population		Sample		Completed Interviews	
	Number	Percent	Number	Percent	Number	Percent
Alamo	22,267	8.2	2,765	8.0	233	8.5
Borderplex	7,066	2.6	869	2.5	80	2.9
Brazos Valley	3,596	1.3	412	1.2	36	1.3
Cameron	3,267	1.2	353	1.0	24	0.9
Capital Area	14,873	5.5	2,148	6.2	165	6.0
Central Texas	3,414	1.3	403	1.2	43	1.6
Coastal Bend	6,227	2.3	804	2.3	84	3.1
Concho Valley	2,296	0.8	259	0.8	19	0.7
Dallas	29,013	10.7	3,829	11.1	253	9.2
Deep East	3,490	1.3	393	1.1	34	1.2
East Texas	9,483	3.5	1,099	3.2	86	3.1
Golden Crescent	2,604	1.0	325	0.9	31	1.1
Gulf Coast	64,867	23.9	8,453	24.4	562	20.5
Heart of Texas	3,533	1.3	423	1.2	59	2.2
Lower Rio Grande	6,758	2.5	771	2.2	69	2.5
Middle Rio Grande	1,429	0.5	171	0.5	19	0.7
North Central	24,935	9.2	3,165	9.1	248	9.1
Northeast Texas	3,187	1.2	366	1.1	38	1.4
North Texas	2,973	1.1	381	1.1	42	1.5
Panhandle	6,133	2.3	656	1.9	71	2.6
Permian Basin	6,395	2.4	1,003	2.9	68	2.5
Rural Capital	8,318	3.1	1,188	3.4	105	3.8
Southeast Texas	3,807	1.4	475	1.4	36	1.3
South Plains	5,336	2.0	609	1.8	61	2.2
South Texas	2,984	1.1	303	0.9	19	0.7
Tarrant	17,110	6.3	2,193	6.3	177	6.5
Texoma	2,117	0.8	242	0.7	22	0.8
West Central	4,438	1.6	555	1.6	55	2.0

*Cell entries are the number of business or the percent of business within each category. Population is estimated using the entire sample from the UI database, the sample is estimated using the drawn sample, and the completed interviews are based on completed interviews including partial completes.

Table 4: Population and Sample by Comptroller Region

	Population		Sample		Completed Interviews	
	Number	Percent	Number	Percent	Number	Percent
High Plains	9,940	3.7	1,265	3.7	132	4.8
Northwest Texas	7,411	2.7	936	2.7	97	3.5
Metroplex	73,175	26.9	9,429	27.2	700	25.6
Upper East Texas	12,670	4.7	1,465	4.2	124	4.5
Southeast Texas	6,474	2.4	696	2.0	70	2.6
Gulf Coast	64,867	23.9	8,453	24.4	562	20.5
Coastal Bend	8,831	3.3	1,129	3.3	115	4.2
Alamo	22,267	8.2	2,765	8.0	233	8.5
Capitol	23,191	8.5	3,336	9.6	270	9.9
South Texas Border	16,790	6.2	1,770	5.1	131	4.8
Upper Rio Grand	7,066	2.6	869	2.5	80	2.9
West Texas	8,691	3.2	1,262	3.7	87	3.2
Central	10,543	3.9	1,238	3.6	138	5.0

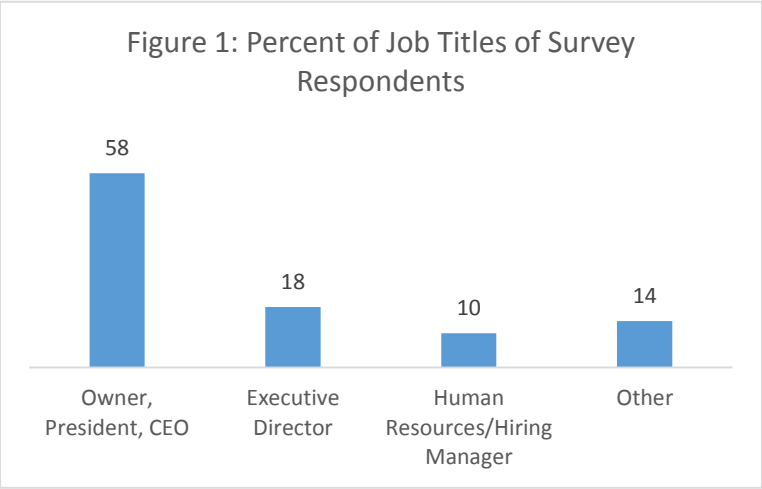
*Cell entries are the number of business or the percent of business within each category. Population is estimated using the entire sample from the UI database, the sample is estimated using the drawn sample, and the completed interviews are based on completed interviews including partial completes.

Survey Findings

About the Businesses

The first section of the report provides background on the businesses that responded to the survey, including the job title of the respondent and the current composition of business employees.

Who Responded? The results presented in this report are based on 2,738 completed online surveys. The overall response rate to the survey was relatively low (8 percent). The businesses that responded to the survey provide excellent representation of employer size, industry sector, and Comptroller Region.



Respondent job titles give further confidence that the survey results provide informative insight into business difficulties in hiring qualified workers. A majority of the respondents (58 percent) identified as CEOs or business owners, 18 percent as executive directors, 10 percent as hiring managers or HR personnel, and 14 percent as something else. The type of respondent depended upon employer size with CEOs of larger businesses (500 or more employers) less likely to respond than CEOs or owners of small businesses.

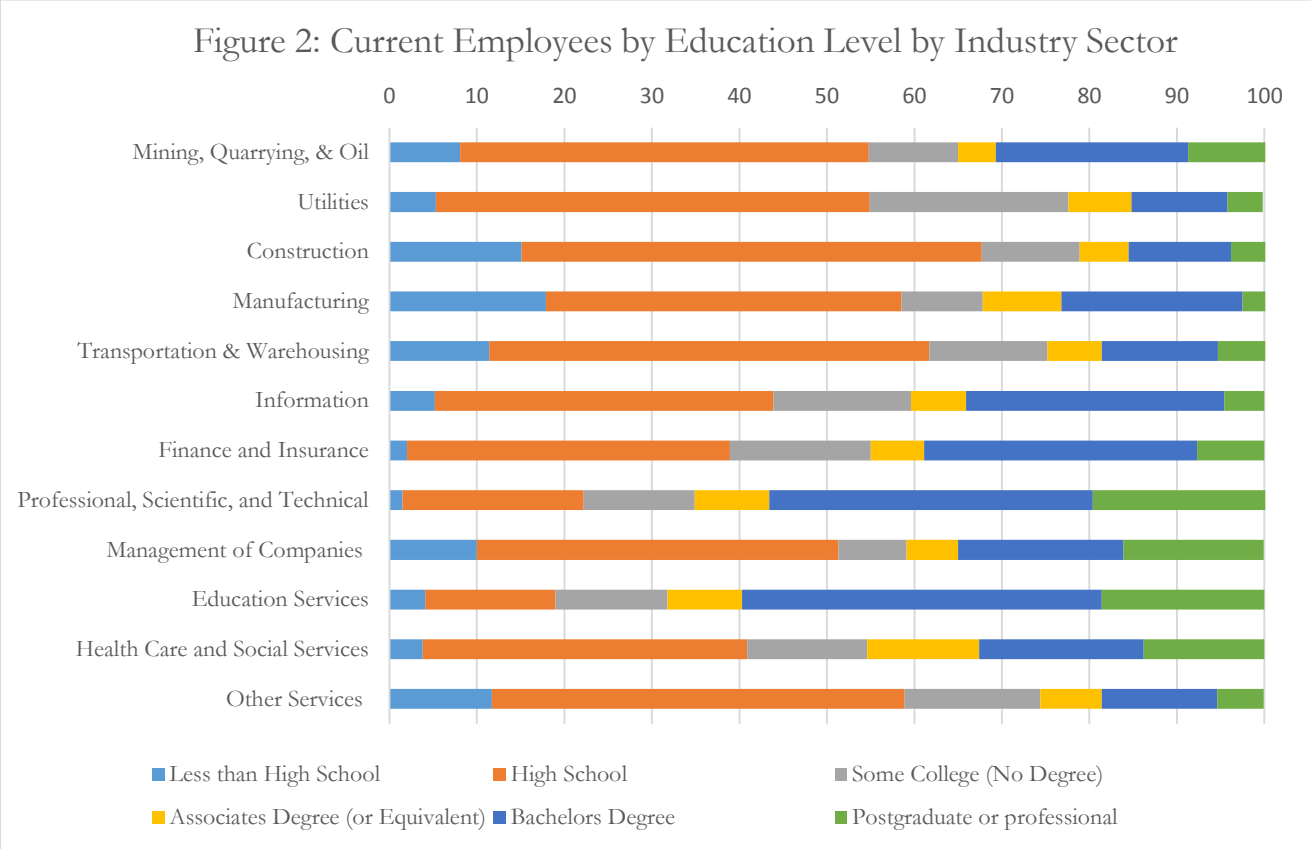
Current Employee Profiles: Education: The businesses that responded also reflect employers with diverse employee profiles in terms of education-level. The typical business included in the sample, for example, included the following breakdown of employees by education-level, as found in Figure 2:

- 7 percent with less than high school education
- 38 percent with a high school degree
- 22 percent with some college (included those with 2-year degrees)
- 33 percent with at least a 4-year degree (included those with post-graduate or professional degree)

The composition of businesses differed by industry sector and region. The professional, scientific, and technical services and the educational services sectors had larger shares of current employees with four-year or post-graduate or professional degrees. Thirty-seven percent of employees in the professional, scientific, and technical services sector had a four-year degree and 20 percent had a professional or postgraduate degree. While employees with *some college, no degree* or with an associate's degree do not make up the largest percentage of employers in any single sector, these employees comprise 20 percent or more of the workforce in 7 of the 12 sectors including in this analysis. Businesses in major metropolitan regions--the Metroplex, Gulf Coast, and Capitol regions--had larger shares of current employees with four-year or professional degrees. In the Metroplex region, 28 percent of current employees had a four-year degree while 13 percent had professional or postgraduate degree. The percentage of employees with *some college, no degree* or with an associate's degree ranges from 16 percent in West Texas to 27 percent in Southeast Texas.

Of interest, if the *high school, some college, and Associates Degree* are combined, 60 percent of the workforce of employers surveyed is included. While it may be difficult to understand the *high school degree* percentage, it may be due to the way the question was worded. Given the results of other survey

questions (refer to Figure 16), it may be that employers included credentials such as occupational licenses, industry-based certifications, and apprenticeships in the *high school* category, as these credentials do not require completion of a postsecondary college certificate or degree.



Current Employee Profiles: Employee Type: Eighty-percent of employees in the average business are full-time employees, 19 percent are part-time and under two percent are temporary. Differences across industry sector, employer size, and region are relatively small. The most notable exception is education services which relies much more heavily on part-time employees (44 percent) than other industry sectors.

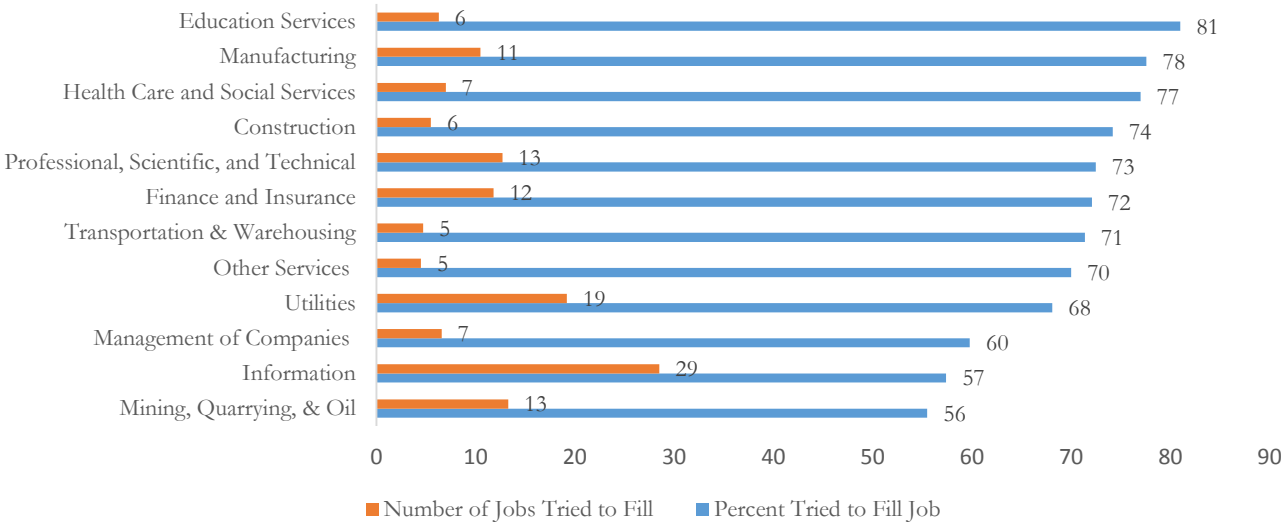
Hiring Experiences

The second section of the report deals with questions of hiring including whether the company has tried to fill positions in the past 12 months, the number of positions they tried to fill, their difficulty in doing so, and the qualifications for these positions.

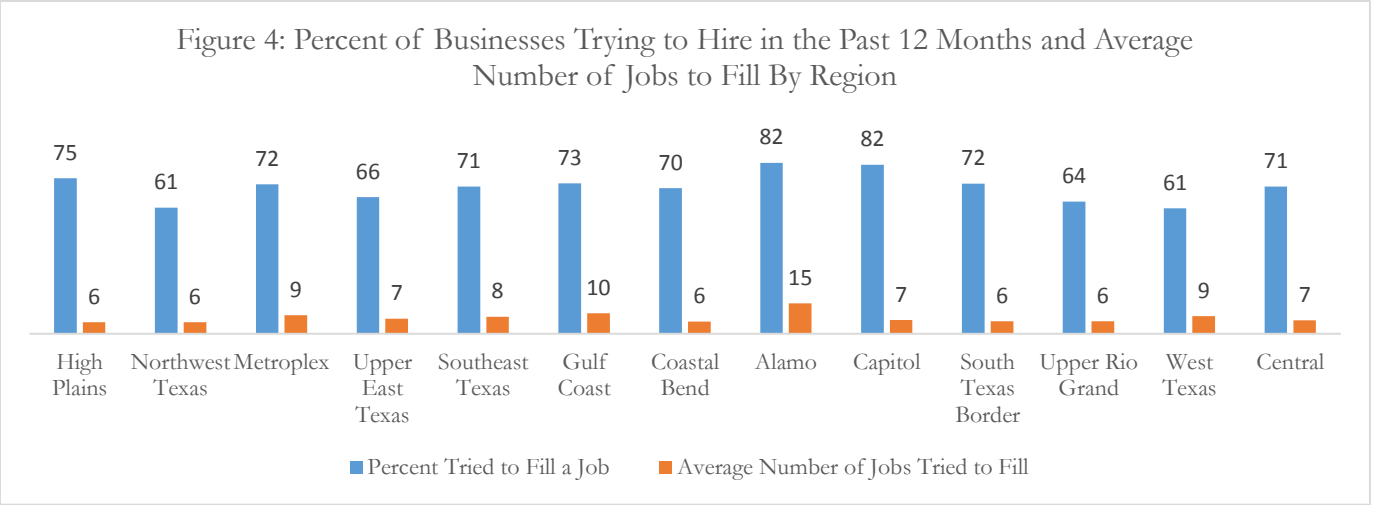
Hiring in the Past 12 Months: Nearly three-quarters (73 percent) of the businesses included in the sample tried to hire in the past 12 months. Given the focus of the survey and the tendency of businesses who were not hiring to opt out of the survey, this likely overestimates the number of businesses hiring. The percent of businesses hiring over the past 12 months differed significantly by industry-sector, employer size, and region.

Figure 3 presents the percent of businesses that tried to hire new workers in the past 12 months by industry sector. Eighty-one percent of business in the educational services sector hired in the past 12 months compared to 55 percent in the mining, quarrying, & oil sector. Differences across employer size primarily reflected differences between smaller employers and everyone else. Specifically, 68 percent of small businesses (2-19 employees) tried to hire in the past 12 months compared to 93 percent of businesses with 20-99 employees, 91 percent of businesses with 100-499 employees, and 95 percent of businesses with 500 or more employees.

Figure 3: Percent of Businesses Trying to Hire in Past 12 Months and Number of Jobs to Fill by Industry Sector

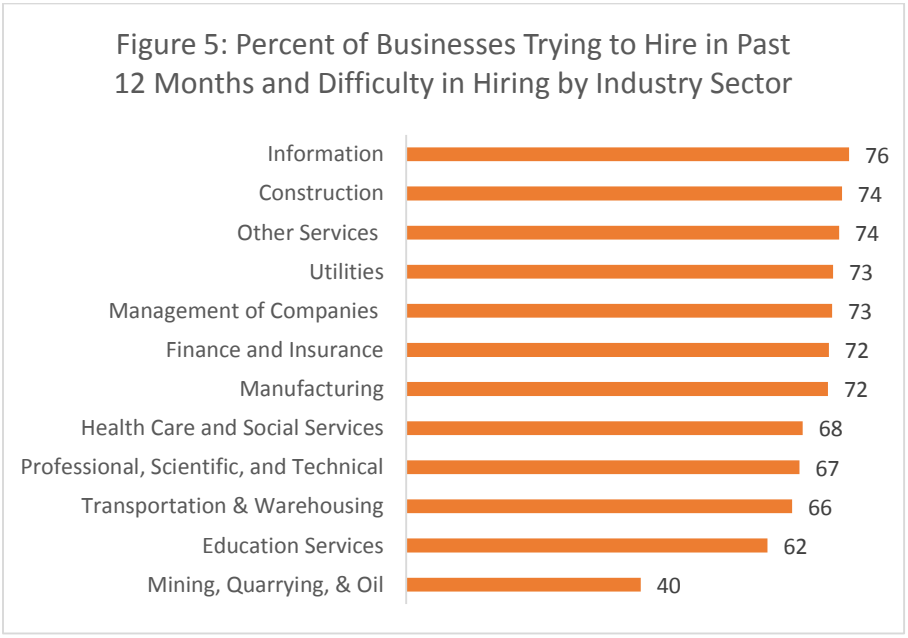


Differences across regions likely reflected differences in employer size as businesses in larger metropolitan areas – the Alamo, Capitol, and Gulf Coast regions – were more likely to report having tried to hire in the past 12 months. West Texas, Northwest Texas, and the Upper Rio Grande were less likely to have tried to hire in the past 12 months.



Businesses that indicated they had tried to hire in the past 12 months were asked a follow-up question about the number of jobs they had tried to fill. Companies that tried to hire in the past 12 months, posted an average number of 8.5 jobs. There were notable differences in the number of jobs by industry sector, employer size, and region. First, businesses in the information sector, on average, indicated trying to fill 29 jobs over the past 12 months, followed by utilities which tried to fill 19 jobs, and mining, quarrying, and oil which tried to fill 13 jobs. Second, as would be expected, larger businesses were actively trying to fill more positions than smaller businesses. There were few differences by region. Most regions average fewer than 8.5 jobs posted-with the notable exception of the Alamo region which attempted, on average, to fill 15 jobs in the past 12 months followed by Gulf Coast (10 jobs), and West Texas (8.5 jobs).

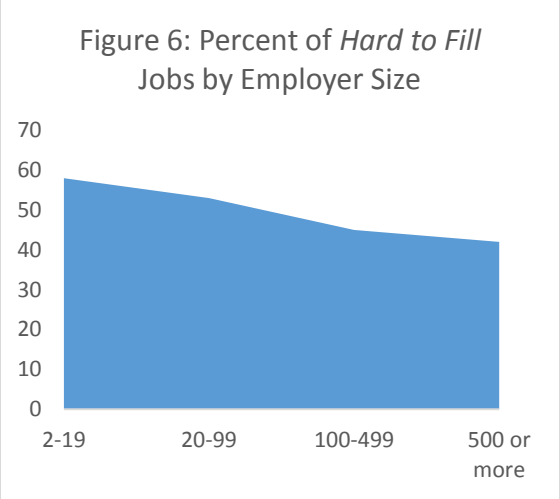
Difficulty in Hiring: More than two-thirds of businesses that tried to hire in the past 12 months (69 percent) reported some difficulty in doing so. Seventy-six percent of business in the information sector reported difficulty in hiring compared to just 40 percent of employees in the mining, quarrying, and oil sector. The estimate compares well with the Outlook Survey which estimates that 72 percent of manufacturing businesses experienced difficulty hiring, identical to the number reported below.



Larger businesses, which were more likely to have tried to hire over the past 12 months and hire a larger number of positions, were also more likely to report greater difficultly in filling at least some of these positions. Sixty-eight percent of businesses with 2-19 employees indicated experiencing difficulty in hiring compared to 88 percent of businesses with 500 or more employees. While these differences were notable, the more important point is that nearly all businesses reported some difficulty in hiring.

Regional differences to this question were relatively small. Sixty-two percent of businesses in Southeast Texas reported difficulty in hiring compared to 74 percent in Upper East Texas and the Capitol region, respectively. Overall, all of the regions experienced at least some difficulty in hiring.

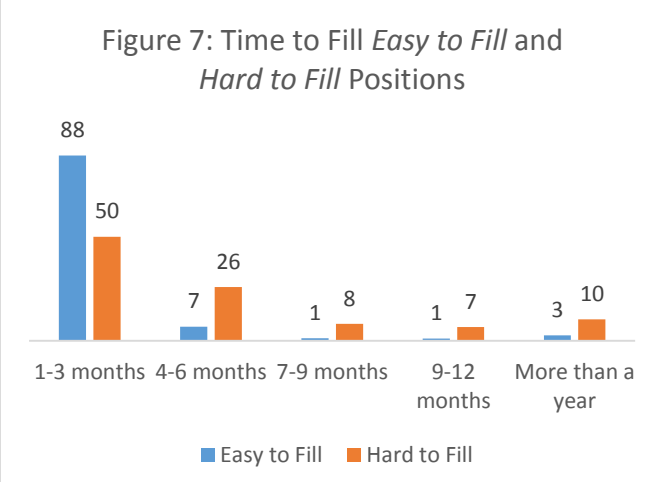
***Easy to Fill* Versus *Hard to Fill* Positions**: Additional insight can be gained from examining the reported break down between *easy to fill* and *hard to fill* positions. On average, businesses estimated that 45 percent of their jobs were *easy to fill* while 55 percent were *hard to fill*. Differences across industry sector are instructive. For example, businesses in the mining, quarrying, and oil sector were less likely to report trying to hire in the past 12 months and experienced less difficulty in doing so. These employers similarly estimated few jobs (42 percent) as *hard to fill*. Businesses in the utilities sector, in contrast, reported that 62 percent of their jobs were *hard to fill*.



Larger employers were more likely to report that some jobs were difficult to fill but also estimated fewer jobs as a percent of total jobs as *hard to fill*. Employers with 500 or more employees estimated 42 percent of jobs were *hard to fill* compared to 58 percent for smaller employers (2-19 employees), 53 percent for employers with 20-99 employees, and 56 percent for employers with 100-499 employees.

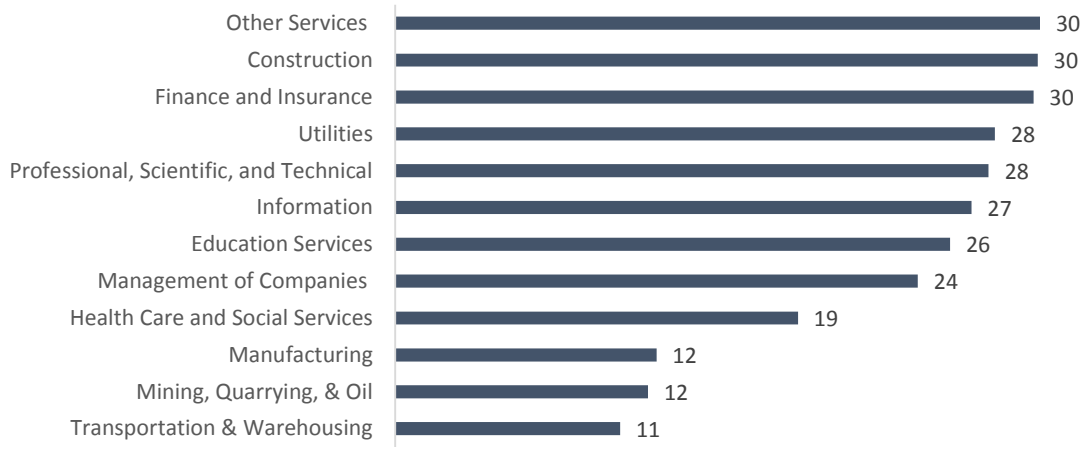
Regional differences were fewer and less notable. Businesses in the High Plains and Central regions, for example, reported 59 percent of their jobs were *hard to fill* compared to 49 percent in Northwest Texas and the South Texas Border. Most of the regions, however, were near the overall average of 55 percent of jobs that were *hard to fill*.

Time to Hire: The difficulty in hiring positions was evident in the amount of time it took to fill *easy to fill* relative to *hard to fill* positions. Most *easy to fill* positions were filled in less than a month. Many of these *easy to fill* positions (88 percent) were filled in less than three months. Approximately a quarter of *hard to fill* positions, in contrast, required four or more months to fill. One in 10 of these positions took more than a year to fill.



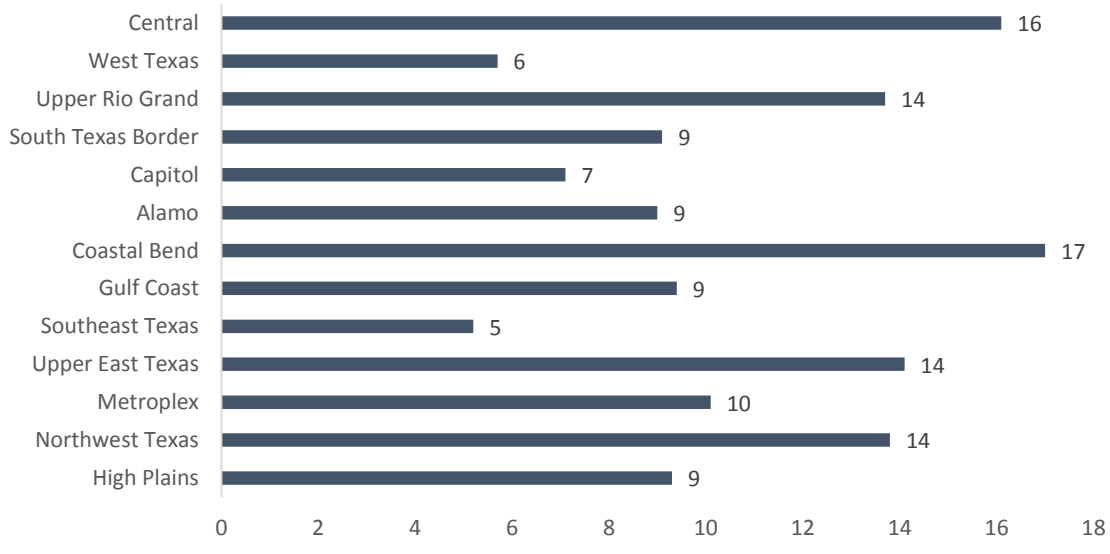
When it came to industry sectors, construction, other services, and finance and insurance reported taking more time to fill *hard to fill* positions. Thirty percent of the businesses in these sectors took at least six months to fill *hard to fill* positions. Transportation and warehousing, mining, quarrying, and oil, and manufacturing took less time to fill these *hard to fill* positions. Only 12 percent of manufacturing businesses took more than six months to fill one of these positions.

Figure 8: Percent of Business Taking Six or More Months to Fill *Hard to Fill* Positions by Industry Sector



Regional differences are also noteworthy. Hiring these *hard to fill* positions took the least amount of time in Southeast Texas and the most time in Central Texas, Northwest Texas, and Upper East Texas. Only 17 percent of businesses reported taking more than 6 months to hire in Southeast Texas. In Central Texas, in contrast, a comparable 16 percent reported that it took a year or more to hire.

Figure 9: Percent of Employers Taking More than a Year to Fill *Hard to Fill* Position by Region

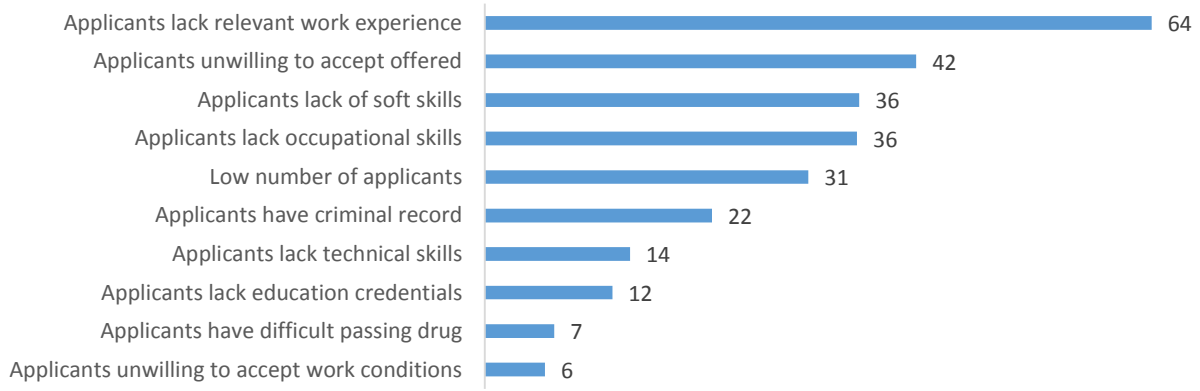


Challenges in Filling Difficult to Fill Open Positions: To better understand challenges in hiring, respondents were asked to identify the top three challenges in filling open positions. Figure 10 displays the percent of businesses ranking each challenge as a top three challenge. Lack of relevant work experience was ranked in the top three by 64 percent of businesses. There is a notable 22-point gap between work experience and the second most ranked challenge, willingness to accept offered positions, indicating "relevant work experience" dominates other considerations. Forty-two percent of respondents ranked "applicants were unwilling to accept offered positions" followed by a lack of soft skills (36 percent) and occupational skills (36 percent), respectively.

It is also worth noting what was not ranked as a top challenge. Only 12 percent of businesses ranked a "lack of educational credentials" as a challenge in filling new positions. Similarly, 14 percent of businesses ranked the lack of technical skills is a top challenge in hiring employees. These results are instructive as they reveal that businesses find the lack of work experience and occupational skills--and not education or technical skills--as a greater challenge in filling open positions.

The results presented here differ from recent results from the Outlook Survey. According to the Outlook Survey, the most cited difficulty in finding qualified workers is the lack of technical competencies (62 percent) followed by the lack of soft-skills (46 percent). The differences reflect differences in question format and response options. The Outlook Survey was a check all that apply format (rather than a rank the top three considerations) and did not include a separate category for occupational skills. Moreover, the question of experience noted "a lack of experience" rather than "a lack of relevant work experience."

Figure 10: Percent of Businesses Ranking Challenges in Hiring Qualified Workers as a Top Three Challenge



While there was variation across industry sector in terms of the percent of businesses ranking each of these challenges, lack of work experience was the number one challenge across industry sectors. The one exception was manufacturing where businesses were slightly more likely to identify an unwillingness to accept offered positions as a challenge. Lack of work experience was ranked less frequently as top three challenge by businesses in educational services (54 percent) and most often by utilities (73 percent) and finance and insurance (72 percent). Several other findings merit mentioning:

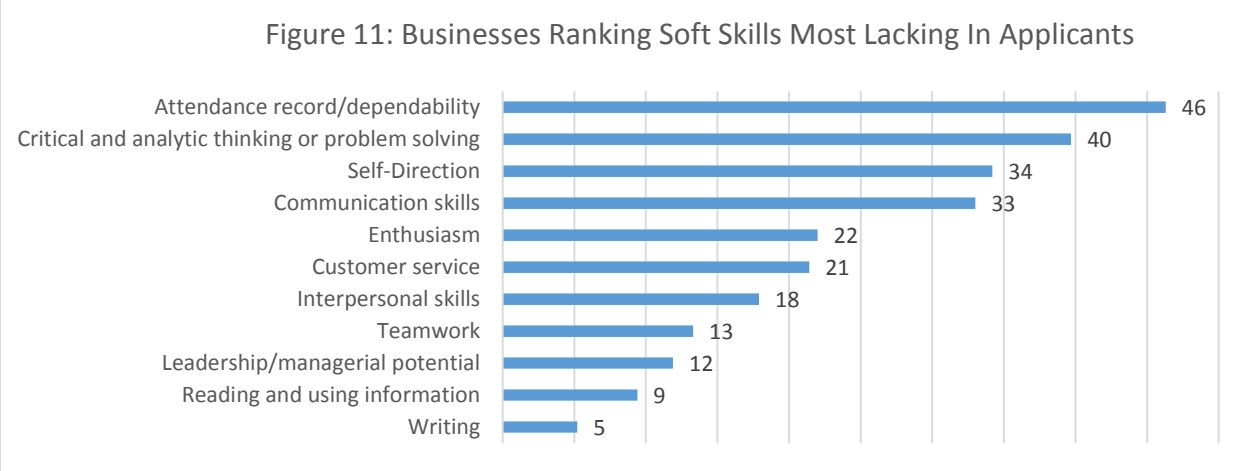
- Information (50 percent) and professional, scientific, and technical (48 percent) sectors were most likely to rank the lack of occupational skills as a challenge.
- The mining, quarrying, and oil (39 percent) and finance and insurance (44 percent) sectors were more likely to rank a low number of applicants as a challenge.

- While it still ranked relatively low on the overall list of challenges, the mining, quarrying, and oil (13 percent) and transportation and warehousing (12 percent) sectors were more likely to rank "unwilling to accept work conditions" as a challenge.
- Manufacturing (60 percent), health care (52 percent), and finance and insurance (48 percent) were more likely to rank applicants unwilling to accept offered positions as a challenge.

In terms of policy implications, each of these challenges suggest a different strategy. Lack of occupational skills, for example, might be addressed with training programs while an unwillingness to accept offered positions might require higher compensation and better benefit packages.

Differences in challenges by employer size were fairly small though larger businesses (500 or more employees) were less likely to rank work experience (53 percent) or occupational skills (28 percent) as challenges and were more likely to rank passing criminal background checks (42 percent) and drug tests (21 percent) as challenges.

While there were regional differences in rankings, regional level findings mostly reflected the overall findings. For example, the percent of businesses ranking work experience, ranged from 52 percent in Southeast Texas to 74 percent in West Texas though work experience remained the top ranked challenge across regions.



The Soft Skills Challenge: When asked to rank the soft skills applicants were most lacking, businesses gravitated toward attendance and dependability. Unlike ranking the difficulty in filling open positions, however, no single criterion clearly surpassed all others as challenge. Forty-six percent of businesses rated attendance and dependability as a soft skill that applicants were often lacking followed by a lack of critical thinking and problem-solving (40 percent), self-direction (34 percent), and communication skills (33 percent). It is also worth noting what is not ranked frequently as a top three challenge. Only five percent of businesses ranked writing and only 9 percent ranked "reading and using information" as soft skills lacking in current applicants. Only 9 percent of businesses ranked "leadership or managerial potential" and only 13 percent ranked "teamwork" as top three challenge.

Looking across industry sectors (see Table 5), the utilities, mining and information sectors rated attendance and dependability as less important (relatively) while the management of companies and construction sectors rated it as more important. The information sector, however, was the only sector that did not rank attendance among its top three soft skill challenges, perhaps reflecting an ability to

telecommute and offer flexible work schedules. Other soft skills that were frequently ranked included critical thinking, self-direction, and communication skills.

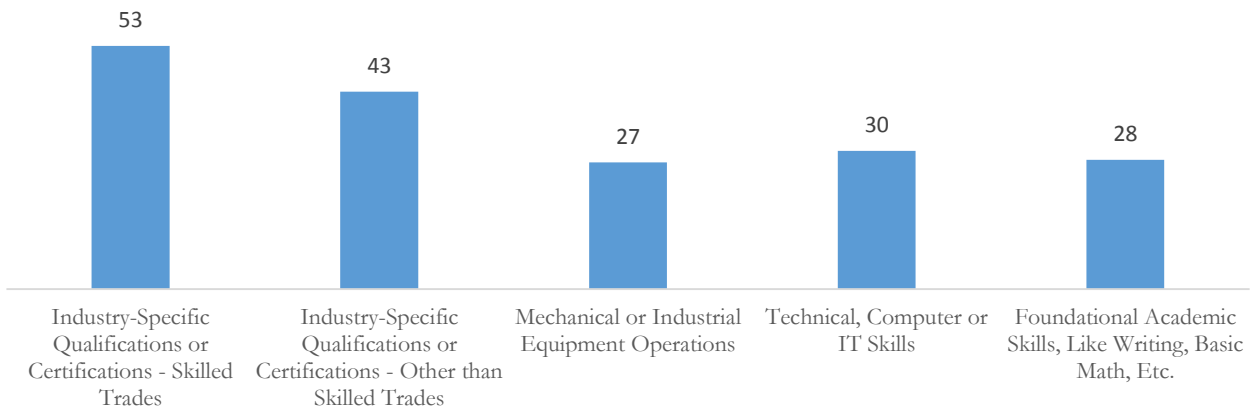
There were few consistent differences across employer size or region. Attendance was the most frequently ranked soft skill across regions with the notable exceptions of the Capital Region and the Upper Rio Grande. In the Capital Region, businesses were slightly more likely to rank critical thinking ahead of attendance, though the difference is not statistically significant. In the Upper Rio Grande, 56 percent of businesses ranked critical thinking as a soft skill that applicants were lacking while 41 percent ranked communication skills and 37 percent ranked attendance as their most challenging soft skills. Overall, regional differences appeared less important than differences across industry sector.

Table 5: Ranking for Soft Skills Most Missing in Applicants

	Rank #1	**Rank #2**	**Rank #3**
Mining, Quarrying, & Oil	Critical Thinking	Attendance	Self-Direction
Utilities	Self-Direction	Attendance	Critical Thinking
Construction	Attendance	Critical Thinking	Self-Direction
Manufacturing	Attendance	Self-Direction	Customer Service
Transportation & Warehousing	Attendance	Critical Thinking	Self-Direction
Information	Self-Direction	Communication Skills	Critical Thinking
Finance and Insurance	Communication Skills	Attendance	Critical Thinking
Professional, Scientific, and Technical	Critical Thinking	Communication Skills	Attendance
Management of Companies	Attendance	Self-Direction	Team-Work
Education Services	Critical Thinking	Attendance	Communication Skills
Health Care and Social Services	Attendance	Critical Thinking	Self-Direction
Other Services	Attendance	Critical Thinking	Self-Direction

Difficulty in Finding Occupational and Technical Skills or Qualifications in the Local Area: Businesses were further asked to rate the difficulty of finding specific skills or qualifications in the local area on a 5-point scale ranging from not at all difficult (1) to very difficult (5). The results presented in Figure 12 reflect the percent of businesses who identified a skill as difficult (4) or very difficult (5) to find. Fifty-three percent of businesses rated industry-specific qualifications for skilled trades as difficult or very difficult to find while 43 percent rated industry-specific qualifications--other than skilled trades--as difficult to find. Businesses rated foundational academic skills like writing, basic math, etc. (28 percent) and technical, computer and IT skills (30 percent) as less difficult to find in the local area.

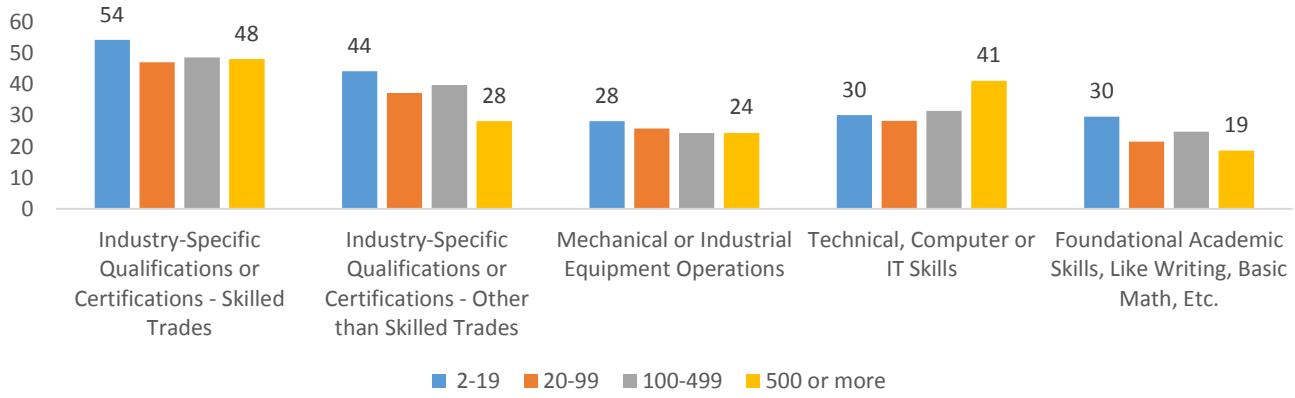
Figure 12: Percent of Businesses Identifying Occupational and Technical Skills or Qualifcations as Difficult to Find in the Local Area



While there were differences in the ratings across industry sector, the patterns were mostly the same. For example, 40 percent of businesses in the management sector rated skilled trades as difficult to find compared to 69 percent in the information sector. However, skilled trades was still rated as more difficult to find than the other skills illustrated above.

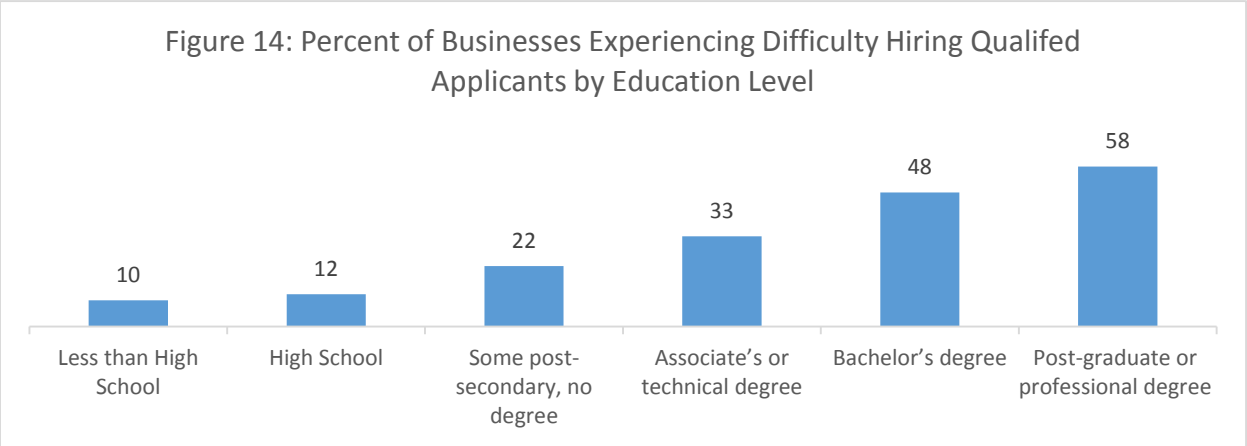
More interesting and consistent patterns emerged for employer size. Larger employers rated each of these skills as less difficult to find than small employers. Fifty-four percent of smaller employers, for example, rated industry-specific skills as difficult to find compared to 48 percent of large employers. Similarly, 30 percent of small businesses rated foundational academic skills as hard to find compared to 19 percent of larger businesses. The one exception was technical, computer or IT skills where larger employers rated these skills as more difficult to find than smaller employers: 41 percent of larger employers rated computer skills as difficult to find compared to 30 percent of smaller employers.

Figure 13: Percent of Businesses Identifying Occupational and Technical Skills or Qualifcations as Difficult to Find in the Local Area by Employer Size



When asked how difficult it has been to hire qualified applicants for positions requiring specific levels of formal education, businesses indicated the greatest difficulty in hiring employees with post-graduate or graduate degrees. This likely reflects the relatively small pool of available employees with advanced or

professional degrees rather than the overall need for these skill sets. At first glance, it may be easy to miss the demand for applicants with *some college, no degree* or an *Associate degree*. Combining these two categories, however, reveals that 55 percent of businesses said it was difficult to hire applicants with some college or an Associate's degree. Perhaps stated differently, it is more difficult to hire qualified applicants with some college or an Associate's degree than it was to hire applicants with a 4-year degree.



Most Difficult Jobs to Fill

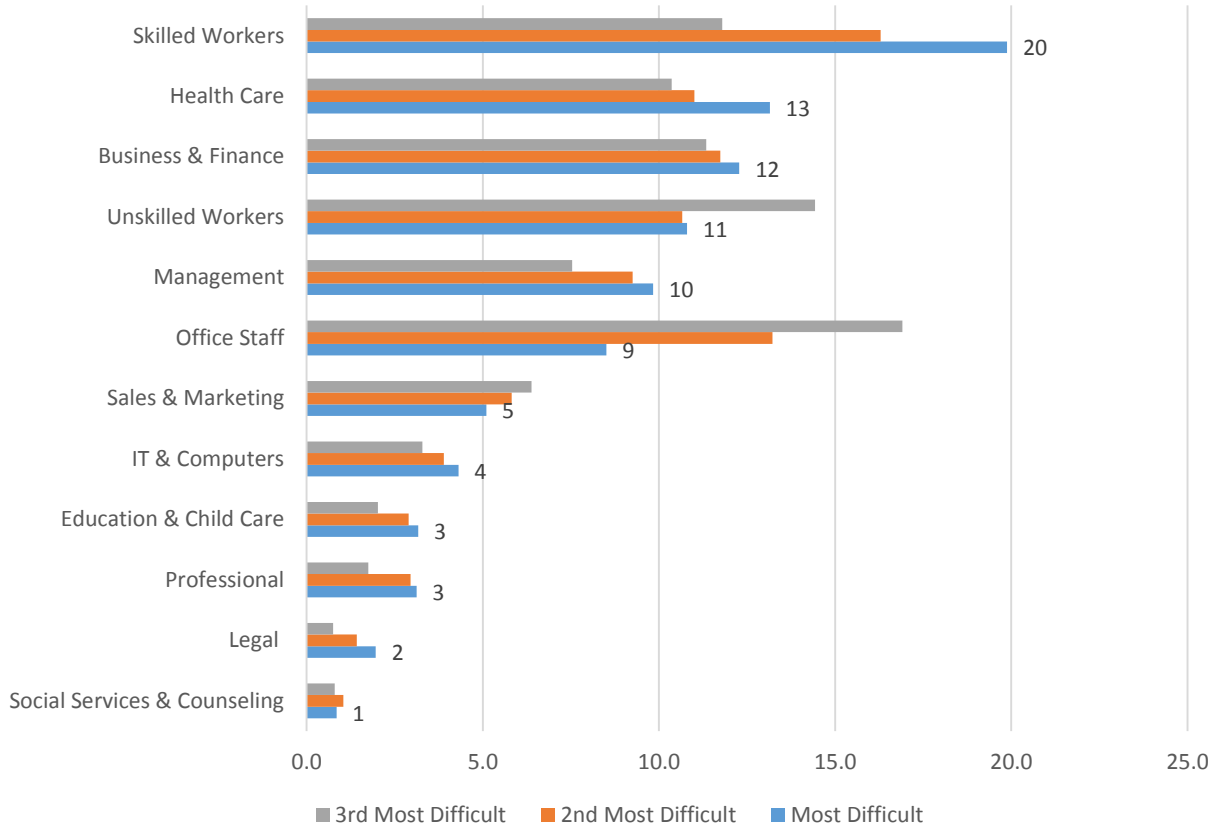
Businesses were asked to identify the top three most difficult jobs to fill in an open-ended format. All responses were coded first to identify the individual job and second to place the jobs within broader employment categories. Below are the broader job categories with representative occupations. The percentages are the percent within the category, not the percent of all responses. For example, accounting positions made up 45 percent of the responses coded into the business and finance category.

- **Skilled Workers**: Technicians (34%), Plumbers (6%), Welders (3.5%), Carpenters (2.8%), Equipment Operators (5.9%), Pipefitters, Lineman, and general references to skilled workers (5.5%)
- **Health Care**: Nurses or nursing assistants (60%), caregivers (10%) including dental (13.3%) and veterinarian-related (16.1)
- **Business & Finance**: Accounting (45%), Bookkeepers (16%), Tax Preparers (14%), Insurance (10%)
- **Unskilled Workers**: General references to labor or workers (41%), Truck Drivers (35%), Foreman or Crew Leader (14%), Custodial (3.4%), Bartenders (1.5%).
- **Management:** Single category for jobs specifically listed as managers.
- **Office Staff**: Administrative Assistants, Receptionists, Secretaries (all coded as a single category).
- **Sales & Marketing**: Customer Service Representatives (26%), Sales (62%), Marketing and PR (11.3%)
- **IT & Computers**: Network, data analysts, web designers, graphics design (single category).
- **Professional**: Architects (18%), engineer (56%), analysts (20%), consultants (5.4%)
- **Education & Child Care**: Childcare Services (22%) and teachers (78%).
- **Legal**: Attorneys (36%) and paralegals (64%)
- **Social Services & Counseling**: Counselors (41%), case managers and social workers (41%)

Positions that did not fit into one of these categories were coded as "other." Responses that did not identify a position were coded as "Don't Know" or "N/A." The percentages reported below are based on the number of businesses that identified a position. Percentages for the *most difficult to fill positions* are based on 2,474 responses, percentages for the second most difficult position are based on 2,124 responses, and percentages for the third most difficult positions to fill are based on 1,703 responses.

Figure 14 displays the *most difficult to fill* positions across all categories. The most difficult positions to fill included skilled labor (20 percent) followed by health care (13 percent), and business and finance (12 percent). Moving beyond the *most difficult position to fill* and into the second and third most difficult positions to fill, office staff and unskilled workers became increasingly more prominent.

Figure 15: Percent of Businesses Identifying *Most Difficult to Fill* Positions Across All Job Categories



Tables 6-8 display the most difficult skill category and the most difficult occupations to hire by industry sector, employer size, and region. First, different industry sectors confront different challenges. Manufacturing and transportation and warehousing, for example, identified unskilled labor as their most difficult positions to hire whereas finance and insurance and professional, scientific and technical sectors identified business and finance positions. Second, different sized businesses also have different needs, particularly in terms of occupations. Smaller businesses need skilled workers, management, and office staff while larger companies more frequently identified health care and IT positions as difficult to fill. Third, there were fewer differences across regions as skilled workers were reported to be in demand in every region of the state.

Table 6: Most Difficult Skill Category and Most Difficult Occupations by Industry Sector

Industry Sector	Most Difficult Category	Most Difficult--Specific Occupations
Mining, Quarrying, & Oil	Unskilled (23%), Skilled (23%)	Manager (15%), Labor (13%)
Utilities	Skilled (61%)	Operator (35%)
Construction	Skilled (48%)	Manager (13%)
Manufacturing	Unskilled (34%)	Labor (29%)
Transportation & Warehousing	Unskilled (47%)	Truck Driver (45%)
Information	Other (18%)	Technicians (15%), Other (15%), Sales (14%)
Finance and Insurance	Finance (31%), Sales (31%)	Sales (17%), Customer Service (12%)
Professional, Scientific, and Technical	Finance (17%), IT (14%)	Computer-Related (10%)
Management of Companies	Finance (23%), Unskilled (24%), Management (19%)	Management (19%)
Education Services	Education (35%)	Teachers (33%)
Health Care and Social Services	Health Care (44%)	Nurses/Nurses Aids (31%), Office Staff (12%)
Other Services	Skilled (36%)	Technicians (12%), Manager (10%)

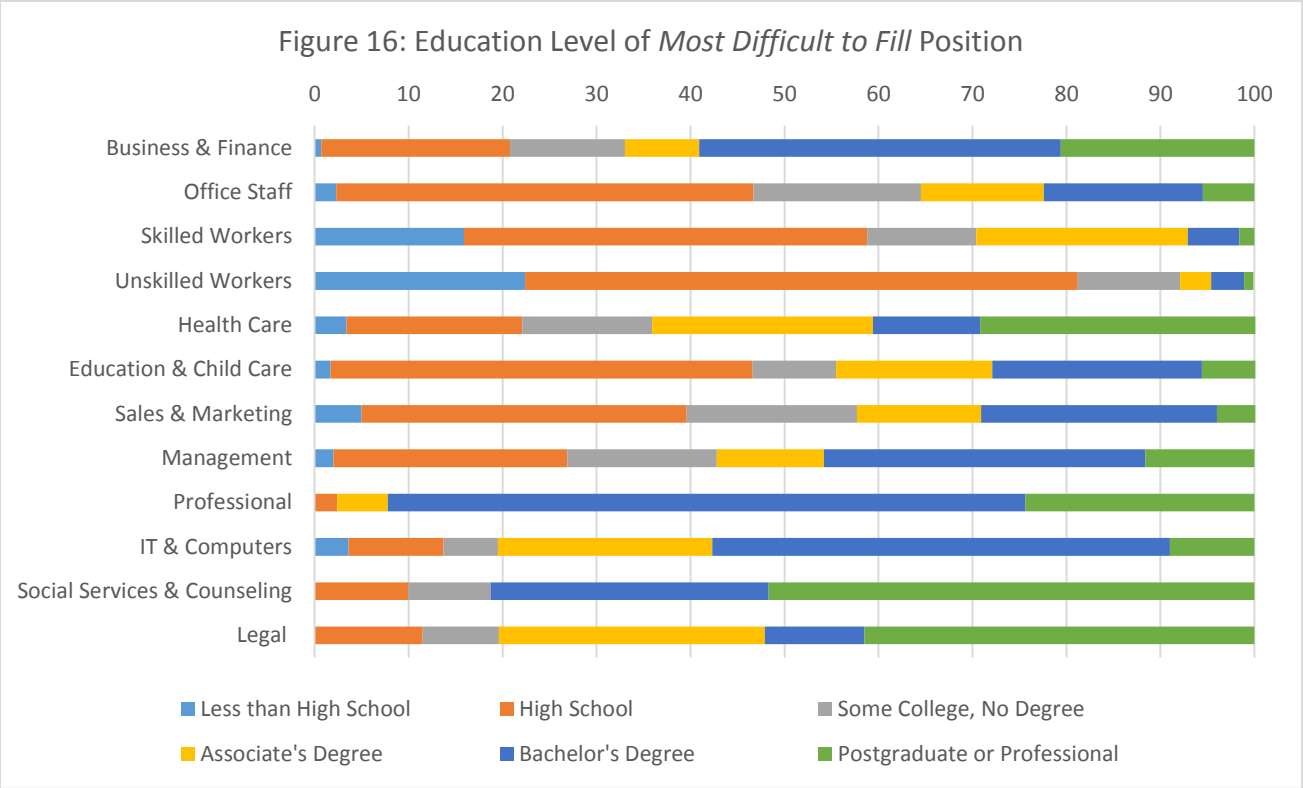
Table 7: Most Difficult Category and Most Difficult Specific Job by Employer Size

Employer Size	Most Difficult Category	Most Difficult--Specific Occupation
2-19	Skilled (20%), Finance (13%)	Management (9.1%), Office Staff (8.5%)
20-99	Health Care (14%), Unskilled (13%), Management (13%)	Management (13%), Nurses (9.3%),
100-499	Health Care (21%), Skilled (16%)	Nurses (19%),
500 or more	Health Care (28%), IT (11%)	Nurses 21%), Computer (11%),

Table 8: Most Difficult Category and Most Difficult Specific Job by Comptroller Region

Region	Most Difficult Category	Most Difficult--Specific Occupation
High Plains	Skilled (22%), Unskilled (21%)	Management (9.8%), Office Staff (7.7%)
Northwest Texas	Unskilled (22%), Skilled (19%)	General Labor (13%), Management (10%),
Metroplex	Skilled (19%), Health Care (13%), Finance (12%)	Management (8.8%), Accounting (7.5%)
Upper East Texas	Skilled (16%), Health Care (15%), Finance (15%)	Office Staff (14%), Accounting (12%), Management (11%)
Southeast Texas	Skilled (26%), Health Care (20%)	Health Care (13%), Management (8.6%)
Gulf Coast	Skilled (19%), Health Care (13%), Finance (12%)	Office Staff (11%), Management (9.5%)
Coastal Bend	Skilled (23%), Unskilled (15%), Office Staff (12%)	Office Staff (11%), Management (9.7%)
Alamo	Skilled (17%), Health Care (14%), Unskilled (13%)	Management (12%), Health Care (8.8%)
Capitol	Skilled (23%), Unskilled (15%), Management (12%)	Management (12%), Technicians (11%), General Labor (8.2%)
South Texas Border	Skilled (20%), Health Care (19%), Management (12%)	Health Care (16%), Management (12%)
Upper Rio Grand	Finance (21%), Health Care (15%), Skilled (12%)	Accounting (14%), Health Care (12%)
West Texas	Skilled (28%), Finance (16%)	Accounting (13%), Truck Drivers (8.3%)
Central	Finance (22%), Health Care (15%), Skilled (13%)	Office Staff (11%), Health Care (11%), Accounting (10%)

Given these responses, the greatest needs in terms of education level require a high school diploma as the minimum qualification. Having said that, it is worth noting that combining the *some college, no degree* and *Associate's degree* categories in Figure 15 reveals that roughly 30 percent of the most difficult positions to fill now require some college (including a two-year degree) or four-year or post-graduate degree, respectively. When compared to the education levels of current employees as illustrated previously in Figure 2, it becomes clear that employers have higher skills and qualifications expectations for filling new positions. Therefore, community and technical colleges and four-year degree programs become more important. Roughly 1 in 3 *hard to fill* positions require less education and more work experience or training. This suggests that employers are looking for credentials such as industry-based certifications and certificates or work-based learning experiences through an apprenticeship program.

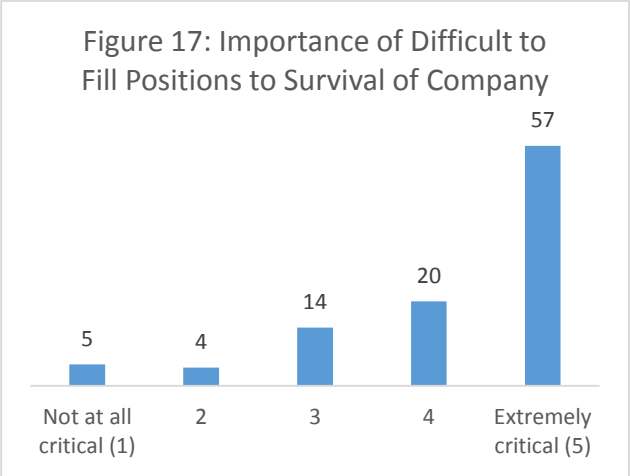


Looking across job categories identified above, the educational demands of *most difficult to fill* positions become more apparent. Listed below in Table 9 are the job categories with the percent of jobs requiring a high school degree and the percent requiring some college or an Associate's degree. Because the question did not ask specifically ask about industry certification and apprenticeships as options, it is difficult to determine exactly where these jobs fit in terms of the responses, but based on previous answers it is clear that employees with industry certifications or apprenticeships are a substantial share of employer workforce needs, and-based on the limited selection options- may be included in the *high school* data since these do not require completion of a postsecondary program.

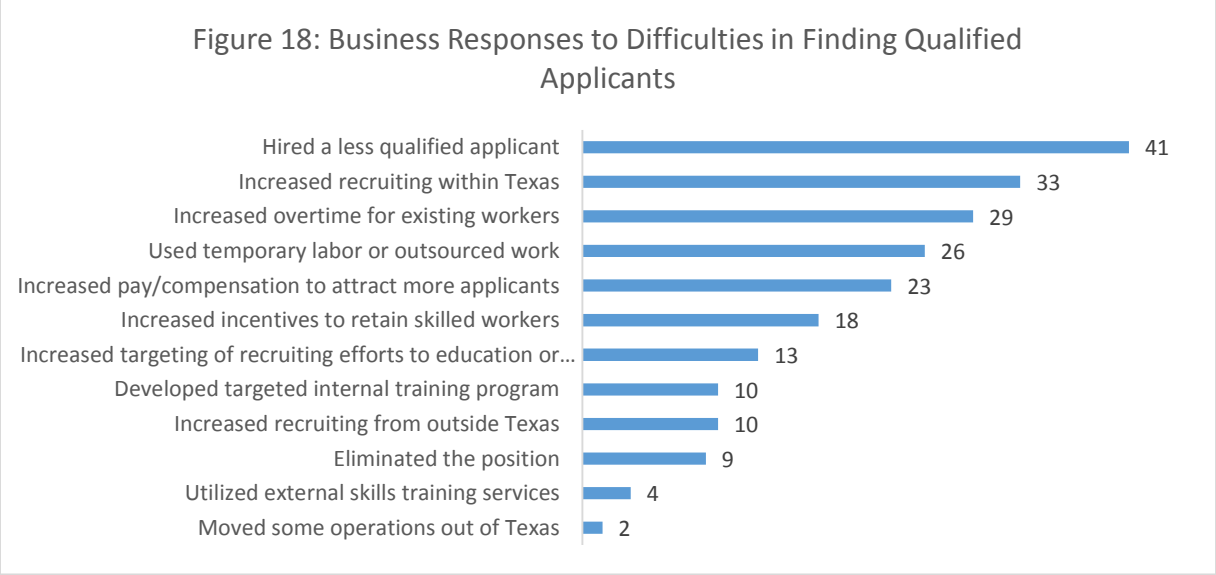
Table 9: Percent of Most Difficult to Fill Positions by Education Level and Type of Job

Sector	High School Degree	Some College or Associate's Degree
Business & Finance	20%	20%
Office Staff	44%	31%
Skilled Labor	43%	34%
Unskilled Labor	59%	14%
Health Care	19%	37%
Education & Childcare	45%	26%
Sales & Marketing	35%	31%
Management	25%	27%
Professional, Scientific, & Technical	2%	5%
IT & Computers	10%	29%
Social Services	10%	9%
Legal	12%	36%

Importance of Difficult to Fill Positions to Business Survival: If there is one point of agreement in the survey, it is in the importance of these positions to business survival. Fifty-seven percent of businesses said these difficult positions are "critical to our survival" while only five percent of businesses said the positions are not at all critical. There are only minor differences across industry sector and employer size.



- The mining, quarrying, and oil and the management of companies sectors are less likely to say these positions are critical to survival. However, 39 percent of mining businesses and 41 percent of management companies rated the importance of these positions as critical.
- Larger companies are more likely to identify these positions as critical. Seventy-two percent of larger businesses (500 or more employers) compared to 55 percent of smaller businesses (2-19 employees) identified the positions as critical to their survival.
- Jobs classified as social services and counseling and education and child care are more likely to be identified as critical to survival. Ninety percent of business that identified the most difficult jobs as social services and counseling and 81 percent of businesses that identified jobs as education and child care said these positions are critical to survival. Notably, these categories are relatively small so the results should be treated with caution.
- Differences across region are less pronounced.



Confronted with difficult to fill positions, the most common response from these businesses was to hire less qualified applicants (41 percent) followed by increased recruiting within Texas (33 percent) and increased overtime for current employees (29 percent). It is perhaps worth noting that these businesses are not likely to move operations out of Texas, utilize external training, or eliminate positions because of difficulties in finding employees.

The most notable differences across industry sector involve hiring less qualified applicants. Fifty-eight percent of manufacturing businesses, 57 percent of utilities, and 51 percent of construction companies indicated they hired less qualified applications, meaning these sectors are more reliant on less qualified applicants.

Larger businesses, with more tools at their disposal, are more likely to engage in most of these activities.

- 73 percent of larger businesses compared to 28 percent of smaller businesses increased recruiting within Texas.
- 43 percent of larger businesses compared to 8 percent of smaller businesses increased recruiting outside of Texas.
- 50 percent of larger businesses compared to 26 percent of smaller businesses increased overtime for existing employees.
- 39 percent of larger businesses compared to 25 percent of smaller businesses used temporary labor.
- 28 percent of larger businesses compared to 17 percent of smaller businesses used internal training.

Smaller businesses and larger businesses looked similar in terms of hiring less qualified workers and eliminating positions.

Table 10: Activities to Fill *Hard to Fill* Positions by Industry Sector

	Recruit in TX	Recruit outside TX	Increase OT	Target Recruiting	Hired Less Qualified	Used Temps	Increase Pay	Internal Training	Incentives to Retain	External Training	Moved Ops	Eliminate Positions
Mining, Quarrying, & Oil	28.2	9.8	24.3	11.4	25.6	19.6	23	5.7	13.8	4.5	0.6	4.1
Utilities	32.6	5.4	25.5	8.6	56.8	17.1	27.8	10.8	26.3	6.9	0	3.5
Construction	28.2	7.2	35.4	7.4	50.6	33.5	25.6	9.3	20.9	3.2	0.3	9.5
Manufacturing	28.9	6.7	31.6	7.3	58.1	38.1	24.8	8.8	20.3	7.8	2.6	9.6
Transportation & Warehousing	44.8	12.5	17.8	11.8	38.7	24.6	28.8	3.8	22.2	3.6	4.7	9.4
Information	33.5	24.4	18.7	8.1	38.4	27.5	14	13.1	12.6	9.2	2.4	13.6
Finance and Insurance	37.7	6.4	15.9	10.3	40.0	19.4	18.5	11.7	12.4	4.6	1.2	11.8
Professional, Scientific, and Technical	32	16.3	26.9	13.8	36.5	28.9	21.8	9.6	16.2	4.3	2.7	8.4
Management of Companies	24.7	3.5	21.6	14	35.6	30.8	10.4	5.4	5.6	0	0	3.8
Education Services	41.3	17.9	17.4	26.5	34.2	15.1	29.7	17.7	21.4	1.9	1.3	8.9
Health Care and Social Services	35.3	6.7	34.9	17.9	35.5	25.4	21.8	13.1	17.4	2.8	1.6	8.9
Other Services	27.6	7.7	30.8	12.8	46.8	15.9	23.8	8	17.3	2.3	0	9.9

*Cell entries are the percent of businesses selecting various activities to fill *hard to fill* positions.

Table 11: Activities to Fill *Hard to Fill* Positions by Comptroller Region

	Recruit in Texas	Recruit outside Texas	Increase OT	Target Recruiting	Hired Less Qualified	Used Temps	Increase Pay	Internal Training	Incentives to Retain	External Training	Moved Ops	Eliminate Positions
High Plains	28.1	6.4	27.7	7.6	47.3	30.2	22.4	6.8	20.6	6.7	0.0	13.8
Northwest Texas	30.6	7.8	28.6	12.7	44.9	20.3	31.6	5.5	7.7	5.0	1.8	6.5
Metroplex	34.0	10.7	24.0	14.5	39.7	28.1	20.6	11.1	16.5	2.7	2.3	9.8
Upper East Texas	35.7	7.6	36.3	10.2	43.8	22.8	27.7	12.4	13.2	7.9	1.3	8.7
Southeast Texas	31.1	8.1	30.7	11.7	35.8	27.4	19.3	8.2	13.8	3.5	0.0	12.7
Gulf Coast	36.4	10.9	29.3	12.7	37.7	22.9	24.6	11.3	15.8	3.2	2.2	7.2
Coastal Bend	24.5	3.0	27.7	12.6	44.1	23.1	19.7	9.4	17.8	5.1	0.0	7.2
Alamo	41.3	15.0	36.0	15.8	42.4	24.3	24.4	11.0	20.5	5.8	0.2	8.2
Capitol	30.9	13.7	29.5	12.8	44.3	26.6	23.0	8.7	20.3	1.4	1.7	7.4
South Texas Border	21.9	5.7	36.4	11.8	36.1	24.7	21.1	10.5	24.8	0.4	0.0	15.8
Upper Rio Grand	28.8	7.0	29.6	14.9	40.0	20.1	16.3	5.6	26.0	5.0	4.8	4.5
West Texas	22.9	9.4	31.7	11.1	38.2	22.5	33.5	7.5	26.2	2.4	0.8	13.8
Central	28.3	7.9	28.1	10.6	44.3	26.8	23.9	10.9	13.7	3.8	0.0	11.6

*Cell entries are the percent of businesses selecting various activities to fill *hard to fill* positions.

To find difficult to hire employees, business use a mix of old (word of mouth) and new (electronic job boards and social networking). The most widely used tool in recruiting is word-of-mouth followed by electronic resources including electronic job boards. Eighty-one percent of businesses used word-of-mouth to increase recruiting while 61 percent used the Internet. Other sources are used considerably less frequently. Social networks, for example, are used by 39 percent of businesses. Notably, community and technical colleges are identified by just 14 percent of businesses as a tool for increasing recruitment. Four-year universities and colleges fare slightly better at 16 percent. The most interesting differences across industry sector involve the use of the internet and electronic job boards. Only 35 percent of mining businesses and 38 percent of utilities use the internet or electronic job boards compared to 70 percent in educational services, 69 percent in health care, and 67 percent in information.

Larger businesses use more resources than smaller businesses.

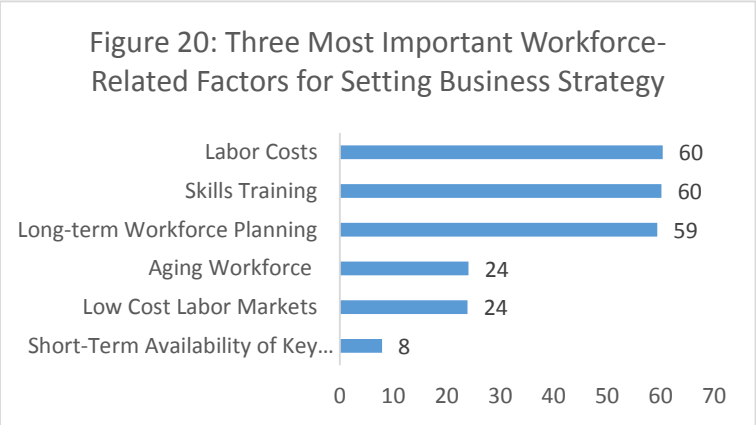
- Larger businesses are more likely to use the internet and electronic job boards (92 percent) and WorkInTexas.Com (50 percent) than smaller companies (56 percent and 11 percent, respectively).
- 55 percent of larger businesses advertise in local newspapers compared to 29 percent of smaller businesses.
- 55 percent of larger businesses utilize local workforce solutions compared to 11 percent of smaller businesses.
- 59 percent of larger businesses use social networks compared to 38 percent of smaller businesses.
- 48 percent of larger businesses use 4-year colleges compared to 13 percent of smaller businesses.
- 70 percent of larger businesses use job fairs compared to 6 percent of smaller businesses.
- 57 percent of larger businesses use recruiting agencies compared to 17 percent of smaller businesses.
- 50 percent of larger businesses use community colleges compared to 13 percent of smaller businesses.

Across the board, larger businesses have more resources at their disposal for recruiting and can employ multiple methods for addressing a lack of qualified applicants. However, recall from earlier in this report, larger employers are also more likely to say these difficult to fill positions are critical to their survival. Observed difference then may reflect both economies of scale and the resources to engage in additional recruiting as well as critical needs.

Labor Market Strategies and Current Employees

This section of the report addresses issues related to labor market strategies related to workforce retention and development. Specifically, it addresses questions related to the importance of labor to overall business strategy, deficiencies in current employees and efforts to address those deficiencies.

Workforce Related Factors in Setting Business Strategy: When it comes to ranking the workforce-related factors most important to business strategy for the next 3--5 years, business identified labor costs (60 percent), skills training (60 percent), and long-term workforce planning (59 percent). An aging workforce (24 percent), low-cost labor markets (24 percent), and short-term availability of key talent (8 percent) are ranked less frequently as important workforce-related factor affecting business strategy.



While there are some differences across industry sector, employer size, and region, these three factors are typically the most highly ranked factors relative to business strategy.

Rank of Factors Important to Company's Future: When businesses were asked to select the factors most important factors to the company's future over the next 3--5 years, labor concerns emerged as single most important consideration. Seventy-eight percent of businesses said "maintaining a highly skilled and flexible workforce" was critical to the company's success, 32-points higher than the second highest ranked factor--"increasing the customer service orientation" of the company (46 percent). Maintaining a skilled and flexible workforce is the most highly ranked factor across industry sector, employer size, and region. Larger companies are less likely to rank a flexible workforce (43 percent) than smaller businesses and are more likely to rank ensuring new products and innovations (19 percent compared to 6 percent) as key to the company's future.

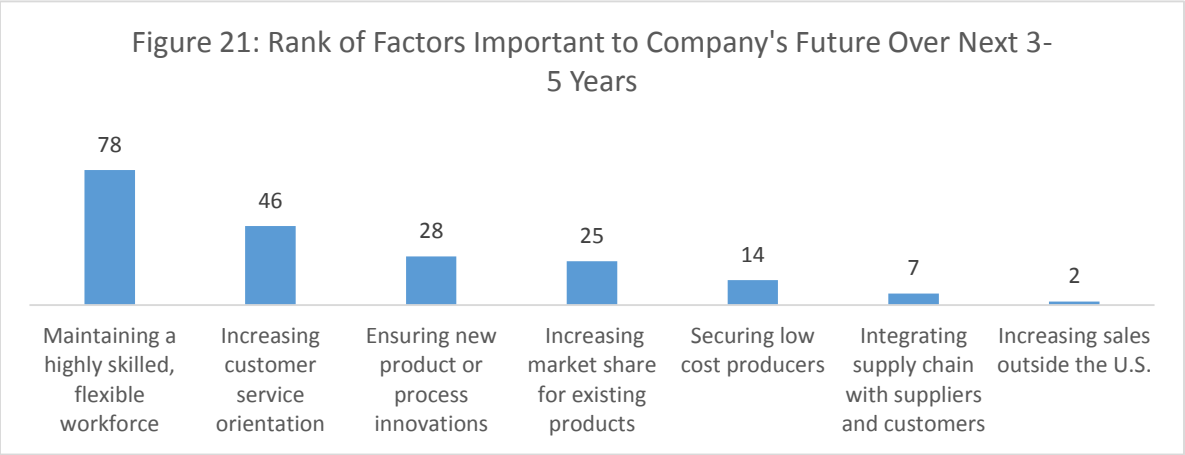


Table 12: Most Important Factors to Company's Future by Industry Sector

	Skilled Flexible Workforce	Ensure New Products	Increase Market share	Lost Cost Producers	Customer Service	Increase Outside U.S. Sales	Integrate Supply Chain
Mining, Quarrying, & Oil	54.8	7.2	16.8	9.4	6.1	3.5	2.1
Utilities	74.4	3.7	0.9	0.0	17.3	0.0	3.7
Construction	59.7	6.2	11.4	5.9	14.6	0.0	2.3
Manufacturing	26.0	12.9	19.2	10.3	24.4	5.9	1.4
Transportation & Warehousing	45.4	7.0	17.4	6.1	17.2	3.7	3.3
Information	50.9	8.0	24.3	3.4	13.3	0.0	0.0
Finance and Insurance	45.3	6.0	23.0	5.2	18.9	1.1	0.5
Professional, Scientific, and Technical	54.6	8.3	16.9	3.7	14.8	0.7	1.1
Management of Companies	46.1	12.0	24.8	1.1	6.5	0.0	9.6
Education Services	47.9	9.3	14.3	1.9	26.2	0.0	0.4
Health Care and Social Services	54.7	5.7	10.5	3.8	24.9	0.0	0.4
Other Services	55.6	4.7	10.1	3.9	22.8	0.5	2.4

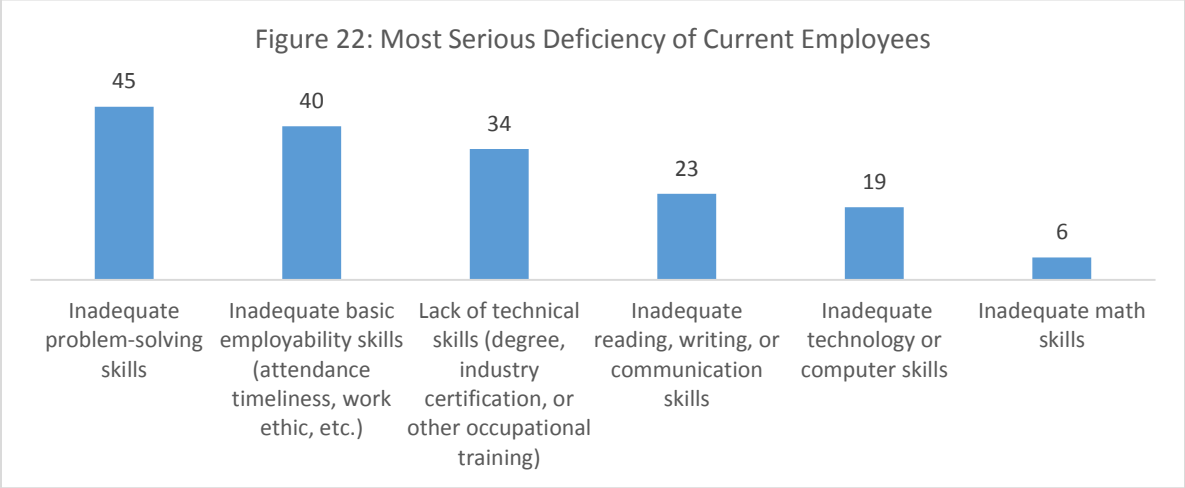
*Cell entries are the percent of businesses ranking each factors as the most important factor to future business success by industry sector.

Table 13: Company Resources Used in Recruiting by Comptroller Region

	Skilled Flexible Workforce	Ensure New Products	Increase Market share	Lost Cost Producers	Customer Service	Increase Outside U.S. Sales	Integrate Supply Chain
High Plains	54.8	7.4	6.4	4.6	25.4	0.0	1.4
Northwest Texas	46.4	16.6	10.7	12.1	13.7	0.5	0.0
Metroplex	52.2	7.0	14.7	3.6	20.5	0.6	1.4
Upper East Texas	56.0	1.3	15.2	5.1	19.8	0.0	2.7
Southeast Texas	61.4	6.4	13.6	5.1	13.6	0.0	0.0
Gulf Coast	52.9	5.3	17.4	4.4	17.0	1.8	1.2
Coastal Bend	52.3	6.0	7.4	2.3	29.5	0.4	2.0
Alamo	61.7	8.8	12.9	2.8	12.6	0.8	0.4
Capitol	53.7	6.7	16.0	3.1	19.0	0.0	1.6
South Texas Border	54.1	8.8	5.8	5.0	24.2	0.3	1.9
Upper Rio Grand	49.9	1.3	6.5	14.6	23.1	0.0	4.5
West Texas	51.3	5.1	22.0	2.7	14.5	1.7	2.6
Central	55.1	7.1	13.4	4.9	18.2	0.0	1.3

*Cell entries are the percent of businesses ranking each factors as the most important factor to future business success by comptroller region.

Deficiencies of Current Employees: The importance of labor considerations to business success provides an impetus for understanding the deficiencies of current employees and how businesses attempt to address these deficiencies. Businesses were asked to rank the top three deficiencies in current employees. The results, presented in Figure 20, reveal the top consideration is inadequate problem solving (45 percent) followed inadequate basic skills (40 percent), and a lack of technical skills (34 percent). Smaller percentages identified communication skills (23 percent), computer skills (19 percent), or math skills (6 percent).

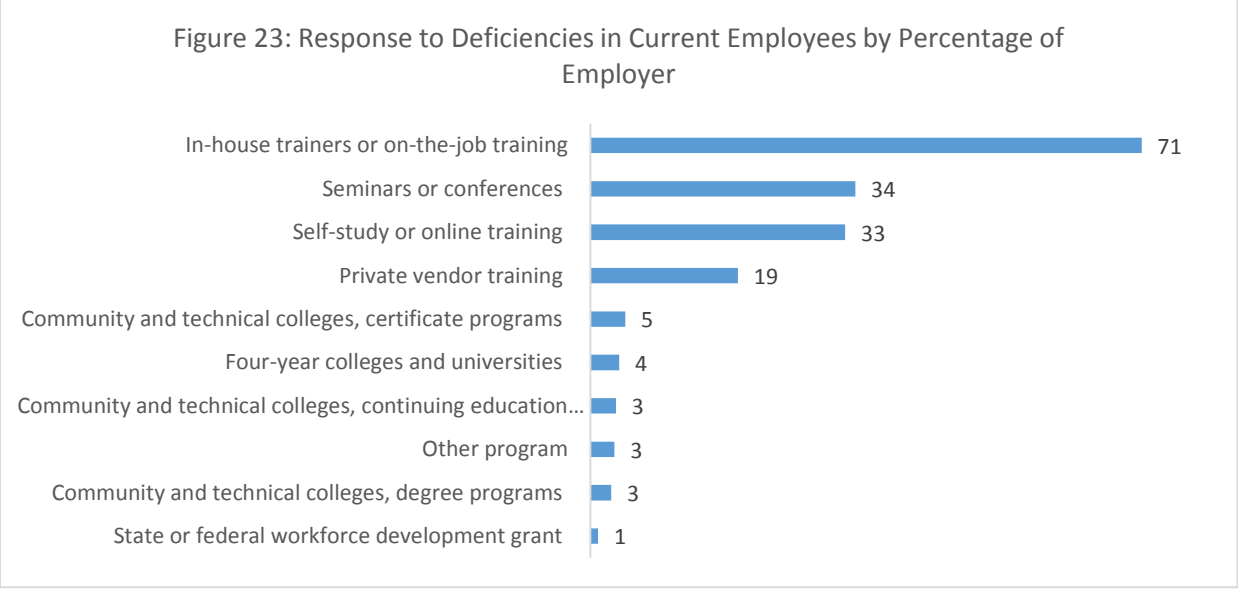


Differences in responses to the most serious skills deficiency across industry reveal the importance of basic skills (attendance, timeliness and work ethic) and problem solving across industry. Differences by employer size and regions are more limited.

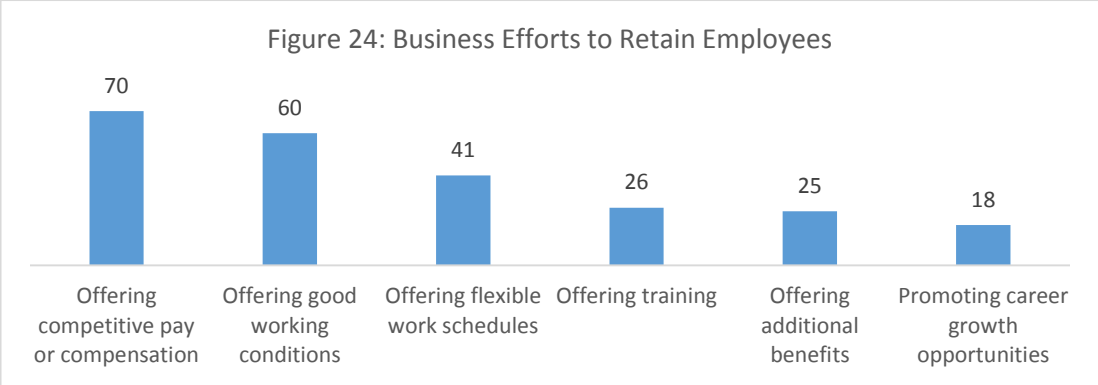
Table 14: Deficiencies in Current Employees by Industry Sector

Industry Sector	Most Serious Deficiency in Current Employees
Mining, Quarrying, & Oil	Inadequate Basic Skills
Utilities	Lack of Technical Skills
Construction	Lack of Technical Skills
Manufacturing	Inadequate Basic Skills
Transportation & Warehousing	Inadequate Problem Solving
Information	Inadequate Problem Solving
Finance and Insurance	Inadequate Basic Skills
Professional, Scientific, and Technical	Inadequate Problem Solving
Management of Companies	Inadequate Basic Skills
Education Services	Inadequate Problem Solving
Health Care and Social Services	Inadequate Basic Skills
Other Services	Inadequate Basic Skills

Business Responses to Deficiencies in Current Employees: When it comes to strategies to address these deficiencies, businesses overwhelming turn inward to providing internal or on-the-job training. Seventy-one percent of businesses reported using in-house or on-the-job training. This is, by far, the most common response. The second most common response, seminars and conferences, was used by 34 percent of businesses followed by self-study (33 percent) and private vendor training (19 percent). Businesses are not turning to 4-year degree programs (4 percent) or community and technical college continuing education (5 percent) or 2-year degree programs.



Company Efforts to Retain Current Employees: The other side of the coin involves what companies are doing to retain employees. Figure 22 presents the ranking of various efforts to retain current employees. Figure 22 reflects the number of businesses that ranked any of these activities in the top three of activities used to retain current employees. The most common effort at retaining employees involved offering competitive pay (70 percent) followed by offering good working conditions (60 percent). Fewer businesses ranked offering training (26 percent), additional benefits (25 percent) or promoting career opportunities (18 percent).



Adopted strategies did depend somewhat on employer size. Seventeen percent of smaller businesses ranked offering flexible schedules as a strategy for retaining employees compared to 7 percent of larger businesses. Larger businesses, on the other hand, are more likely to emphasize offering opportunities for career growth (17 percent compared to 4 percent).

Table 15: Top Method for Retaining Current Employees by Industry Sector

	Competitive Pay	Training	Work Conditions	Flexible Schedules	Additional Benefits	Career Growth
Mining, Quarrying, & Oil	46.5	4.8	15.1	11.5	12.4	9.8
Utilities	51.1	17.2	11.7	7.4	8.0	4.6
Construction	56.3	7.6	20.0	6.7	4.8	4.7
Manufacturing	29.2	7.3	32.6	16.3	10.9	3.7
Transportation & Warehousing	48.7	8.1	23.8	12.0	5.5	1.8
Information	38.4	5.4	28.9	20.9	5.7	0.6
Finance and Insurance	36.7	9.6	27.7	15.2	3.9	7.0
Professional, Scientific, and Technical	39.2	5.6	23.7	21.5	5.1	4.9
Management of Companies	28.0	4.4	26.4	27.2	8.7	5.4
Education Services	38.5	13.2	25.7	14.0	2.4	6.2
Health Care and Social Services	33.0	8.0	32.0	17.8	5.8	3.5
Other Services	45.6	7.4	20.2	18.5	4.7	3.7

*Cell entries are the percent of businesses ranking each method for retaining current employees by industry sector.

Concluding Remarks

Findings of the 2015 Survey of Texas Employers highlight the importance of maintaining a highly skilled and flexible workforce. Seventy-eight percent of employers participating in the survey—a majority of whom were the owner, president, or CEO of the business—indicated that a skilled and flexible workforce is the most important factor to the future success of the company. This finding held true when analyzed by employer size, industry sector, and region. Workforce also ranked considerably higher than increasing customer satisfaction or producing new products especially among small and mid-sized employers.

The results complement other studies on the topic of workforce skills shortages as well as insight from the Council listening sessions in which a number of Texas employers expressed concerns about skills and qualifications missing in the Texas labor market. The survey findings help to quantify hiring difficulty in key industry sectors and regions and offer information about how employers are addressing challenges associated with hiring new workers.

The results indicate a change in employer expectations between the current employee profiles of Texas' employers and current hiring practices while highlighting sectoral and regional challenges to filling those expectations. A lack of work experience is, by a wide margin, viewed as the greatest challenge to filling positions. Technical skills and qualifications such as industry-specific certifications for skills trades (53 percent) and industry-specific certifications–non-skilled trades (43 percent) were identified as the qualifications most difficult to find in local areas.

Employers also reported recruiting less qualified workers and addressing skills deficiencies through in-house trainers and on-the-job training. However, the expected education levels of the most difficult to fill positions indicate that employers are looking for a high school diploma as the minimum qualification, as well as industry-based certifications, and some postsecondary education or an Associate's degree for that training.

Taken together, these findings suggest that employers are looking for skills and qualifications they are not necessarily finding in recent applicants. The findings also indicate that employers may be looking to other types of credentials such as industry-based certifications, certificates, licensure, and completion of work-based learning through apprenticeship programs to determine the skills and qualifications of job applicants, or to develop them—a unique opportunity for the workforce system.

Appendix A: Survey Instrument

2015 Texas Workforce Investment Council Survey

Welcome to the Texas Workforce Investment Council Worker Needs Survey!

We are conducting research on behalf of the Texas Workforce Investment Council. The survey will only take about 10 minutes of your time and will be used to diagnose difficulties in identifying and hiring qualified applicants for open positions. Your business or employer was randomly selected from a database of Texas employers and your responses will be used to represent other businesses in your region and in your industry. Any information you provide will be kept confidential to the extent permitted or required by law. People who have access to your information include the Principal Investigator and research study personnel. Representatives of regulatory agencies such as the Office of Human Research Protections (OHRP) and entities such as the Texas A&M University Human Subjects Protection Program may access your records to make sure the study is being run correctly and that information is collected properly.

If you have any questions about the survey, please feel free to contact Dr. Kirby Goidel (kgoidel@ppri.tamu.edu) or call our toll free number at 1-888-890-0089 FREE, between the hours of 8 am to 9 pm Monday through Friday. For questions about your rights as a research participant; or if you have questions, complaints, or concerns about the research, you may contact the Texas A&M University Human Subjects Protection Program at 979.458.4067, toll-free at 1.855.795.8636 FREE, or email at irb@tamu.edu

By clicking the "Next" button below you are acknowledging that you understand that your participation in the survey is voluntary and that you may quit the survey at any time or refuse to answer any question.

About Your Business

DIRECTIONS: *If your business is in multiple locations, please answer the following question for your current location or worksite. If your business is headquartered in another state or country, please answer for your largest Texas based facility.*

1. What Texas county is your business located in?

[Select County]

2. Which of the following best describes your job title?

Please choose **only one** of the following:

- ○ Owner, President, Vice-President, or CEO
- ○ Executive Director, Manager, Director, (or other middle management)
- ○ Human Resources Manager/Hiring Manager
- ○ Other

3. How many people are currently employed in your Texas-based facility? Your best guess is fine.

- ○ Less than 10
- ○ 10-19
- ○ 20-49
- ○ 50-99
- ○ 100-249
- ○ 250-499
- ○ More than 500

4. Approximately what percentage of current employees at your company have each of the following levels of education? Your best guess is fine, but please make sure the totals add to 100%.

- ○ Less than a high school degree [Enter Percentage]
- ○ High school degree [Enter Percentage]
- ○ Some postsecondary, no degree [Enter Percentage]
- ○ Associate's degree, or similar [Enter Percentage]
- ○ Bachelor's degree [Enter Percentage]
- ○ Postgraduate or professional degree [Enter Percentage]

5. Approximately what percentage of your current employees are:

Please write your answer(s) here:

- ○ Full-time [Enter Percentage]
- ○ Part-time [Enter Percentage]
- ○ Temporary [Enter Percentage]

Hiring

6. Has your company tried to fill any job opening during the past 12 months?

If you choose "Yes," please also enter the number of job openings your company has tried to fill in the past 12 months in the accompanying text field.

- ○ No
- ○ Don't know / Not sure
- ○ Yes (Enter number)

7. Has your business had difficulty filling any of the positions which it has tried to fill?

- ○ Yes
- ○ No

8. Thinking about recent job openings, what percentage would you describe as *easy to fill* or difficult to fill?

Easy to fill	[Enter Percentage]
Difficult to fill	[Enter Percentage]

9. What was the average length of time it took your company to fill positions you would describe as *easy to fill*?

- ○ Less than a month
- ○ 1-3 months
- ○ 4-6 months
- ○ 7-9 months
- ○ 9-12 months
- ○ More than a year

10. What was the average length of time it took your company to fill positions you would describe as “difficult to fill”?

- ○ 1-3 months
- ○ 4-6 months
- ○ 7-9 months
- ○ 9-12 months
- ○ More than a year

11. Please rank your **top three** challenges in filling open positions for your business?

Applicants lack relevant work experience

Applicants lack education credentials

Applicants lack technical skills

Applicants lack occupational skills

Low number of applicants

Applicants lack soft skills (e.g. communication, attendance, enthusiasm)

Applicants unwilling to accept offered wages

Applicants have criminal record

Applicants have difficulty passing drug test

Applicants unwilling to accept work conditions

12. If applicants were lacking soft skills, please rank the top three soft skills that the applicants were lacking?

Attendance record/dependability

Communication skills

Critical and analytical thinking or problem solving

Customer service

Enthusiasm

Interpersonal skills

Leadership/managerial potential

Reading and using information

Teamwork

Writing

Self-direction
N/A

13. Please indicate how difficult it is to find employees in your local area with each of the following technical skills or qualifications?

	(1) Not at all difficult	(2)	(3)	(4)	(5) Exceptionally difficult
Industry-Specific Qualifications or Certifications - Skilled Trades	○	○	○	○	○
Industry-Specific Qualifications or Certifications - Other than Skilled Trades	○	○	○	○	○
Mechanical or Industrial Equipment Operations	○	○	○	○	○
Computer or IT Skills	○	○	○	○	○
Foundational Academic Skills, Like Writing, Basic Math, Etc.	○	○	○	○	○

14. How difficult has it been to hire qualified applicants for positions requiring each of these specific levels of formal education?

	(1) Not at all difficult	(2)	(3)	(4)	(5) Exceptionally difficult
Less than high school degree	○	○	○	○	○
High school degree	○	○	○	○	○
Some post-secondary, no degree	○	○	○	○	○
Associate's or technical degree	○	○	○	○	○
Bachelor's degree	○	○	○	○	○
Post-graduate or professional degree	○	○	○	○	○

15. Please list the (up to) three occupations you have had the most trouble filling.

Most difficult position to fill [Enter Job Title]

Second most difficult position to fill [Enter Job Title]

Third most difficult position to fill [Enter Job Title]

16. Please select the level of education required for the most difficult position to fill.

- ○ LESS THAN HIGH SCHOOL DEGREE
- ○ HIGH SCHOOL DEGREE
- ○ SOME POST-SECONDARY, NO DEGREE
- ○ ASSOCIATE'S OR TECHNICAL DEGREE
- ○ BACHELOR'S DEGREE
- ○ POST-GRADUATE OR PROFESSIONAL DEGREE

17. Please select the level of education required for the second most difficult position to fill.

- ○ LESS THAN HIGH SCHOOL DEGREE
- ○ HIGH SCHOOL DEGREE
- ○ SOME POST-SECONDARY, NO DEGREE
- ○ ASSOCIATE'S OR TECHNICAL DEGREE
- ○ BACHELOR'S DEGREE
- ○ POST-GRADUATE OR PROFESSIONAL DEGREE

18. Please select the level of education required for the third most difficult position to fill.

- ○ LESS THAN HIGH SCHOOL DEGREE
- ○ HIGH SCHOOL DEGREE
- ○ SOME POST-SECONDARY, NO DEGREE
- ○ ASSOCIATE'S OR TECHNICAL DEGREE
- ○ BACHELOR'S DEGREE
- ○ POST-GRADUATE OR PROFESSIONAL DEGREE

19. On a scale of 1-5 (with 1 being "not at all important" and 5 being "critical to our survival") how important is it to your company to fill these difficult-to-fill positions?

- ○ Not at all important (1)
- ○ 2
- ○ 3
- 4
- ○ Extremely important (5)

20. When you had difficulties finding qualified applicants, how did your company respond?

Please choose **all** that apply:

- ☐ Increased recruiting within Texas
- ☐ Increased recruiting from outside Texas
- ☐ Increased overtime for existing workers
- ☐ Increased targeting of recruiting efforts to education or training entities
- ☐ Hired a less qualified applicant
- ☐ Used temporary labor or outsourced work
- ☐ Increased pay/compensation to attract more applicants
- ☐ Developed targeted internal training program
- ☐ Increased incentives to retain skilled workers
- ☐ Utilized external skills training services
- ☐ Moved some operations out of Texas
- ☐ Eliminated the position

21. What resources has your company used in recruiting efforts?

Please choose **all** that apply:

- ☐ Word of mouth
- ☐ Internet, electronic job boards
- ☐ WorkInTexas.com
- ☐ Local newspapers
- ☐ Local Workforce Solutions office
- ☐ Social networking
- ☐ Four-year colleges and universities
- ☐ Job fairs
- ☐ Recruiting agencies/temporary employment services
- ☐ Community and technical colleges
- ☐ Recruit from other companies
- ☐ Community-based organizations
- ☐ Trade associations

Labor Market Strategies and Current Employees

22. Please rank the <u>three most important workforce-related factors</u> you consider when setting your business strategy for the next 3-5 years?

Long-term workforce planning

Labor costs

Low cost labor markets

Short-term availability of key talent

Skills training

Aging workforce

23. Please rank the three most important factors to your company's future business success during the next 3-5 years, given changes in the economy and the business environment?

Maintaining a highly skilled, flexible workforce

Ensuring new product or process innovations

Increasing market share for existing products

Securing low cost producers

Increasing customer service orientation

Increasing sales outside the U.S.

Integrating supply chain with suppliers and customers

24. Please rank the three most serious skill deficiencies in your current employees?

Inadequate problem-solving skills

Lack of technical skills (degree, industry certification, or other occupational training)

Inadequate basic employability skills (attendance timeliness, work ethic, etc.)

Inadequate technology or computer skills

Inadequate math skills

Inadequate reading, writing, or communication skills

Other (please specify)

25. How has your business addressed existing skill deficits for incumbent workers?

Please choose **all** that apply:

- ☐ In-house trainers or on-the-job training
- ☐ Seminars or conferences
- ☐ Self-study or online training
- ☐ Four-year colleges and universities
- ☐ Community and technical colleges, degree programs
- ☐ Community and technical colleges, certificate programs
- ☐ Community and technical colleges, continuing education (non-degree) programs
- ☐ Private vendor training
- ☐ State or federal workforce development grant
- ☐ Other program (please identify):

26. Please rank the top three methods for retaining current employees by importance to your company?

- Offering competitive pay or compensation
- Offering training
- Offering good working conditions
- Offering flexible work schedules
- Offering additional benefits
- Promoting career growth opportunities

27. Please rank all of the following groups from those where the aging workforce and retirements will have the greatest impact, to those where it will have the least impact.

High school degree

Some postsecondary, no degree

Associate's degree, or similar

Bachelor's degree

Postgraduate or professional degree

Texas Workforce System Questions

28. Have you had any experience working with your local Workforce Solutions office?

- ○ Yes
- ○ No

29. What type of experience have you had working with your local Workforce Solutions office?

Please choose **all** that apply:

- ☐ Job posting services
- ☐ Hiring events
- ☐ Employee skills training
- ☐ "Especially for Texas Employers" handbook
- ☐ Layoff assistance
- ☐ Labor market/economic data
- ☐ Tax information
- ☐ Child/elder care or transportation services for employees
- ☐ Other:

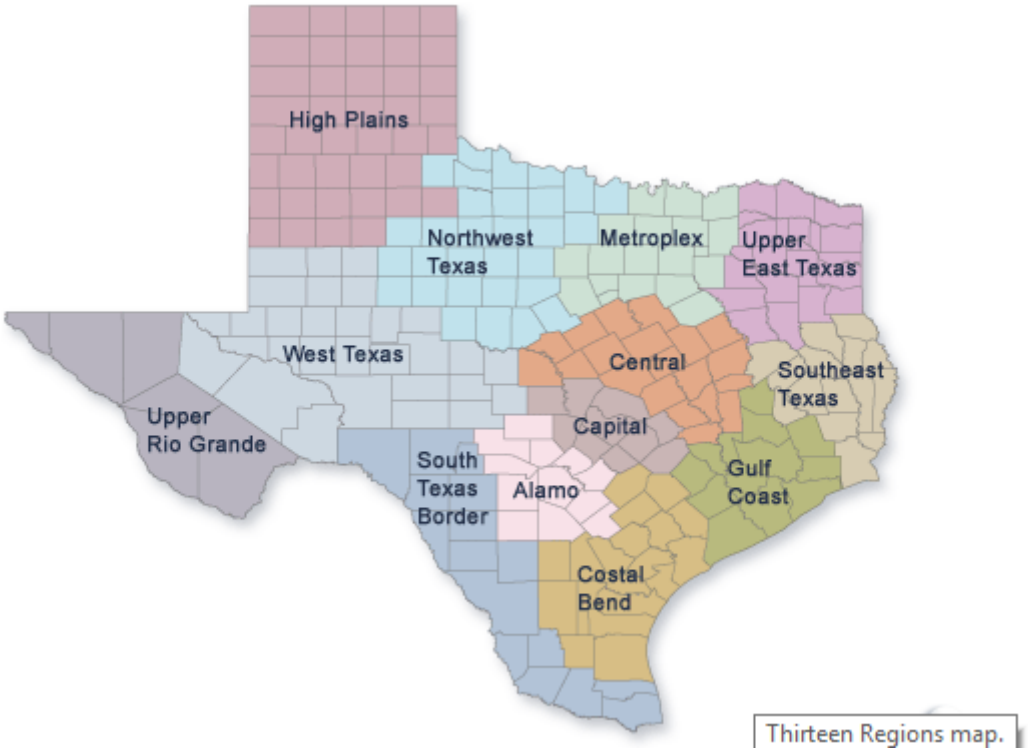
30. Overall, how would you rate your experience working with your local Workforce Solutions office?

- ○ Excellent
- ○ Good
- ○ Fair
- ○ Not very good
- ○ Poor
- ○ DK/Not sure

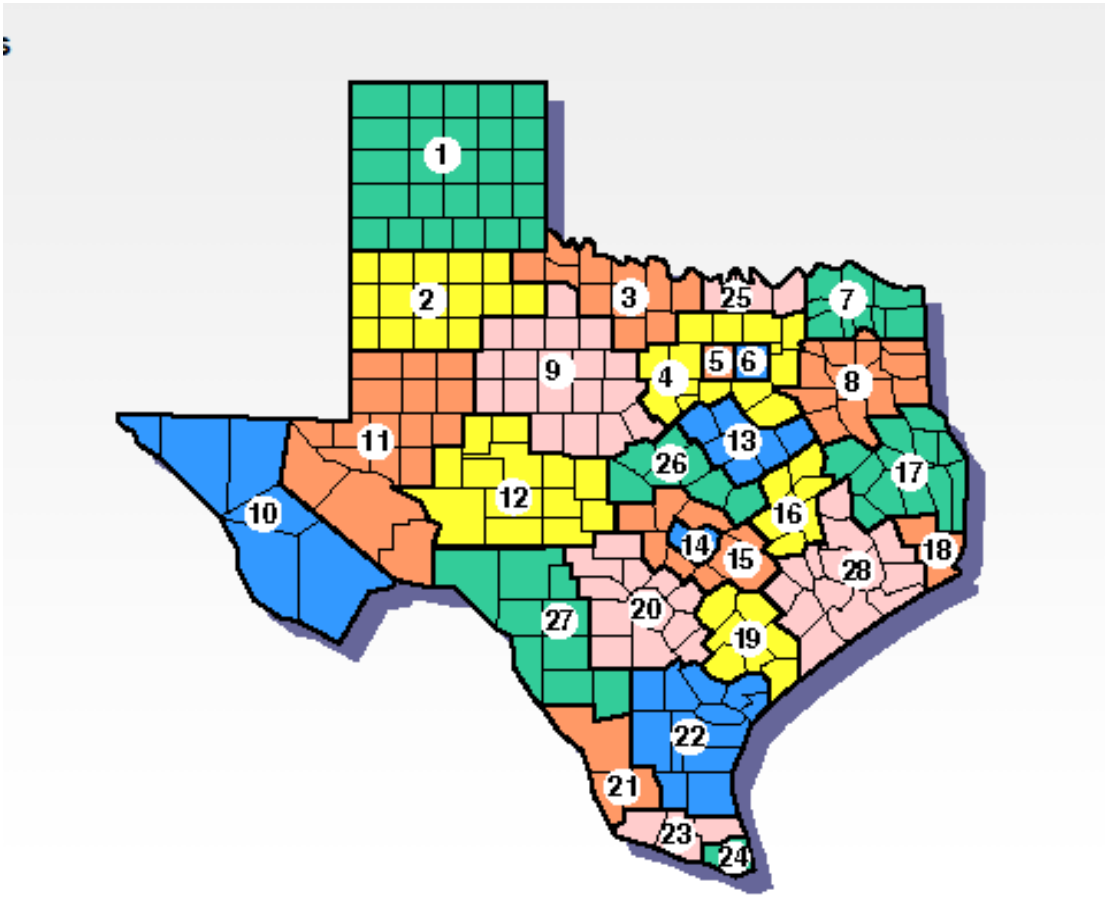
Thank you for your time and participation.

Appendix D: Local Workforce Development Area and Comptroller Region Maps

Thirteen Comptroller Regions



Twenty-eight Local Workforce Development Areas



1. Panhandle	11. Permian Basin	21. South Texas
2. South Plains	12. Concho Valley	22. Coastal Bend
3. North Texas	13. Heart of Texas	23. Lower Rio Grande Valley
4. North Central Texas	14. Capital Area	24. Cameron
5. Tarrant County	15. Rural Capital Area	25. Texoma
6. Greater Dallas	16. Brazos Valley	26. Central Texas
7. Northeast Texas	17. Deep East Texas	27. Middle Rio Grande
8. East Texas	18. Southeast Texas	28. Gulf Coast
9. West Central Texas	19. Golden Crescent	
10. Borderplex	20. Alamo	